

USER MANUAL

08/ 16 CHANNELS

DIGITAL VIDEO RECORDER

INSTRUCTION MANUAL

To obtain the best performance and ensure device function correctly, please read this instruction manual carefully and completely.

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FCC Compliance

USER-INSTALLER CAUTION: YOUR AUTHORITY TO OPERATE THIS FCC VERIFIED EQUIPMENT COULD BE VOIDED IF YOU MAKE CHANGES OR MODIFICATIONS NOT EXPRESSLY APPROVED BY THE PARTY RESPONSIBLE FOR COMPLIANCE TO PART 15 OF THE FCC RULES.

NOTE: THIS EQUIPMENT HAS BEEN TESTED AND FOUND TO COMPLY WITH THE LIMITS FOR A CLASS A DIGITAL DEVICE, PURSUANT TO PART 15 OF THE FCC RULES. THESE LIMITS ARE DESIGNED TO PROVIDE REASONABLE PROTECTION AGAINST HARMFUL INTERFERENCE WHEN THE EQUIPMENT IS OPERATED IN A COMMERCIAL ENVIRONMENT. THIS EQUIPMENT GENERATES, USES, AND CAN RADIATE RADIO FREQUENCY ENERGY AND IF NOT INSTALLED AND USED IN ACCORDANCE WITH THE INSTRUCTION MANUAL, MAY CAUSE HARMFUL INTERFERENCE TO RADIO COMMUNICATIONS.

OPERATION OF THIS EQUIPMENT IN A RESIDENTIAL AREA IS LIKELY TO CAUSE HARMFUL INTERFERENCE IN WHICH CASE THE USER WILL BE REQUIRED TO CORRECT THE INTERFERENCE AT HIS OWN EXPENSE.

THIS CLASS A DIGITAL APPARATUS MEETS ALL REQUIREMENTS OF THE CANADIAN INTERFERENCE-CAUSING EQUIPMENT REGULATIONS.

WARNINGS, CAUTIONS & COPYRIGHT

WARNINGS

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MISTURE.

DO NOT INSERT ANY METALLIC OBJECT THROUGH VENTILATION GRILLS.

CAUTION

	CAUTION RISK OF ELECTRIC SHOCK DO NOT OPEN	
CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK. DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.		

Explanation of Graphical Symbols

	The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of insinuated "dangerous voltage" within the products enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.
	The exclamation point within an equilateral rhombus is intended to alert the user to the presence of important operating and maintenance (servicing) instruction in the literature accompanying the product.

USERS OF THE SYSTEM ARE RESPONSIBLE FOR CHECKING AND COMPLYING WITH ALL FEDERAL, STATE, AND LOCAL LAWS AND STATUTES COIPCERNING THE MONITORING AND RECORDING OF VIDEO AND AUDIO SIGNALS. ULTRAK SHALL NOT BE HELD RESPONSIBLE FOR THE USE OF THIS SYSTEM IN VIOLATION OF CURRENT LAWS AND STATUTES.

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1 INTRODUCTION

1.1 FEATURE

- H.264 video compression.
- 240 PPS
- IRC (IE Remote Control): user can setup DVR from IE browser.
- Recording quality/ rate adjustment per channel available.
- Support CMS (Central Management System) and 3GPP.
- Audio Backup / Audio Streaming.
- Graphic User Interface (GUI).
- Support time-point backup function under Ethernet remote control mode. User can select any time period to process backup from remote side.
- Support time-search & event-search function under Ethernet remote control mode.
- Up to four online clients for independent remote control; individual live-time, play-back & time-search function available.
- Support PPPoE/ Static/ DHCP IP & DDNS.
- Real Triplex, recording/ live-time & playback operation at the same time available.
- ID function supplied from IR remote controller. User can control different DVRs at the same time by using one IR remote controller.

1.2 SPECIFICATION

VIDEO				
MODEL NO.	8CH		16CH	
MODE	Triplex			
IMAGE SYSTEM	NTSC	PAL	NTSC	PAL
LIVE-TIME RESOLUTION	720x480	720×576	720x480	720×576
LIVE-TIME DISPLAY RATE	08 × 30 Frame / Sec	08 × 25 Frame / Sec	16 × 30 Frame / Sec	16 × 25 Frame / Sec
SPLIT SCREEN	1, 4,9		1, 4,9,13,16	
VIDEO INPUT	BNC × 08		BNC × 16	
VIDEO LOOPING	No			
VIDEO OUTPUT (BNC)	BNC x 2		BNC × 1	
VIDEO OUTPUT (SPOT MONITOR)	No		BNC x 1	
VIDEO OUTPUT (S-VIDEO)	Yes			
VIDEO OUTPUT (VGA)	Yes			
AUDIO				
AUDIO INPUT	RCA × 1			

AUDIO OUTPUT	RCA × 1
AUDIO BACKUP	Yes
AUDIO STREAMING	Yes
RECORDING	
COMPRESSION TYPE	H.264
RECORDING RESOLUTION (D1)	NTSC: 720x480
	PAL: 720×576
RECORDING RESOLUTION (HALF D1)	NTSC: 720×240
	PAL: 720×288
RECORDING RESOLUTION (CIF)	NTSC: 360x240
	PAL: 360x288
RECORDING RATE (D1)	NTSC: 720 x 480 up to 60 PPS
	PAL: 720 x 576 up to 50 PPS
RECORDING RATE (HALF D1)	NTSC: 720 x 240 up to 120 PPS
	PAL: 720 x 288 up to 100 PPS
RECORDING RATE (CIF)	NTSC: 360 x 240 up to 240 PPS
	PAL: 360 x 288 up to 200 PPS
RECORDING MODE	Manual / Schedule
PLAYBACK & SEARCH	
PLAYBACK SPEED	Fast Forward X 2 X 4 X 8 Fast Backward X 2 X 4 X 8 field by field Playback Pause
TIME SEARCH	Yes
EVENT SEARCH	Yes
EVENT LIST	3000 records per H.D.D (Maximum)
OSD & CONTROL INTERFACE	
TITLE	8 Characters
ON SCREEN DISPLAY & SETUP	Time / Date / Setup Menu
GRAPHIC USER INTERFACE (GUI)	Yes
DVR CONTROL PANEL	Yes
MOUSE	Yes (Optional)
IR REMOTE CONTROLLER	Yes (Optional)
IE BROWSER	Yes
PLAYER	Yes

STORAGE & BACKUP DEVICE		
INTERNAL HDD SUPPORT	SATA HDD x 2	
EXTERNAL USB HDD SUPPORT	Yes	
USB BACKUP	Yes	
CD/ DVD RW BACKUP	No	
NETWORK		
ETHERNET	Yes	
ETHERNET COMPRESSION FORMAT	H.264	
DDNS	Yes	
NTP	Yes	
E-MAIL & FTP	Yes	
NETWORK IP	Static/ Dynamic/ PPPoE	
MULTI-REMOTE CLIENT	Yes (4 Clients at the same time available)	
PDA/ CELL PHONE SUPPORT	Yes (MPEG-4)	
3GPP	Yes (MPEG-4)	
ALARM		
ALARM INPUT	04 In (NO/ NC)	16 In (NO/ NC)
ALARM OUTPUT	1 Out (NO/ NC)	1 Out (NO/ NC)
MOTION DETECTION	Yes	
MOTION DETECTION AREA	30 x 24 grids	
MOTION DETECTION SENSITIVITY	1-100	
VIDEO LOSS DETECTION	Yes	
ALARM RECORDING	Yes	
BUZZER	Yes	
SETUP & OTHER FUNCTIONS		
DAYLIGHT SAVING TIME	Yes	
PTZ CONTROL	Yes	
RS-232	No	Yes
RS-485	Yes	
DIGITAL ZOOM	Yes	
PASSWORD CONTROL	Three levels, one for system, one for HDD format and the other for Network Password.	
KEY-LOCK	Yes	
MULTI-LANGUAGE	Yes	
FIRMWARE UPDATE	USB Host & Update on line	
OTHERS		

DVR OPERATION

NO.	LABEL	OPERATION	PTZ
1	LED	Led Indicator	
2	○	IR Sensor For Remote Control.	
3	1-4/ 5-8/9-12/ 13-16	Press the button to switch and display full screen of each channel.	
4	4/9/13/16	The button of split screen.	
5	MENU	Menu Setup button	
6	▲▼◀▶	Button Of Controller. Button Of Switching Channel.	UP, DOWN, LEFT & RIGHT
7	CONTROL PANEL	Record, Playback And Control button.	
8	FUNCTION KEYS	Zoom, Auto and Enter/Copy button.	
9	 / 	USB Connector & USB Mouse Connector (Only by supplied mouse).	

Note: 1. User can select camera by using the channel keys on DVR front panel. For



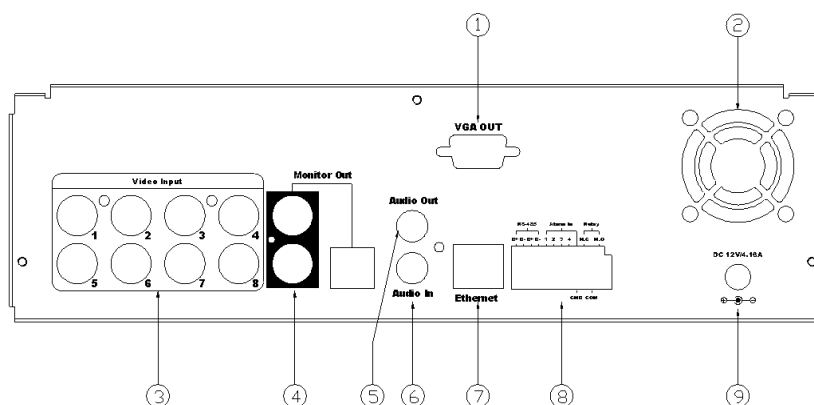
example, user can press “ 13-16 ” key 4 times to see the 16th channel camera



image in 16CH Model; however, press “ 7-8 ” 2 times can see the 8th channel image in 8CH Model.

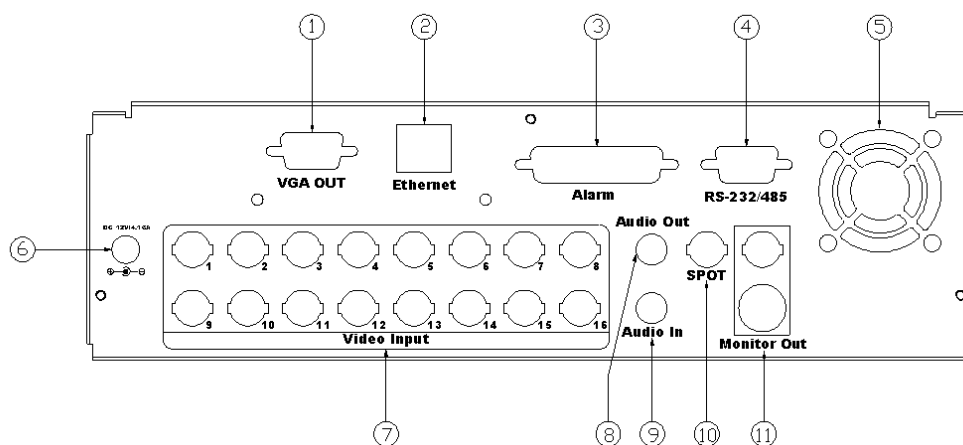
- Under the Full and 16 split screen condition, press SELECT button to switch AUDIO ON/OFF.
- Please plug in the supplied mouse to DVR mouse connector before turn on the DVR. DO NOT REMOVE and PLUG IN the supplied mouse while DVR is operating.

2.2 BACK PANEL



08CH

NO.	LABEL	OPERATION
1	VGA D-SUB OUT	Connect to CRT or LCD monitor.
2	FAN	Cooling fan.
3	VIDEO INPUT	Video input with BNC connector.
4	MONITOR OUT	Video output with S-Video and BNC connectors.
5	AUDIO OUT	Audio output.
6	AUDIO IN	Audio input.
7	ETHERNET	RJ-45 connector for network.
8	ALARM	25 pin D-Sub connector for Alarm input/ output.
9	POWER	Power switcher: DC 12V 4.16A input.



16CH

NO.	LABEL	OPERATION
1	VGA D-SUB OUT	Connect to CRT or LCD monitor.
2	ETHERNET	RJ-45 connector for network.
3	ALARM	25 pin D-Sub connector for Alarm input/ output.
4	RS-232 / RS-485	9 pin D-Sub connector for external control unit.
5	FAN	Cooling fan.
6	POWER	Power switcher: DC 12V 4.16A input.
7	VIDEO INPUT	Video input with BNC connector.
8	AUDIO OUT	Audio output.
9	AUDIO IN	Audio input.
10	SPOT	SPOT video output.
11	MONITOR OUT	Video output with S-Video and BNC connectors.

2.3 ADVANCED AUTO SWITCH ZOOM, PTZ, COPY KEY CONTROL & USB INFORMATION

AUTO SWITCH : In the split screen mode, use the “AUTO” key in the front panel to enable auto switch function. Moreover, press “AUTO” key again to disable it.

ZOOM : In the full screen mode, user can use “ZOOM” button on the front panel to perform ZOOM function. Press ▲ ▼ ◀ ▶, located on the front panel, to move the zoom window.

PTZ : When camera supported PTZ function, user can use “PTZ” button, located on the front panel, to perform PTZ function. Press ▲ ▼ ◀ ▶ to select and change setup value.

COPY : Within the playback mode, press “COPY” button to start backup record and press “COPY” again to end backup. The user can see the backup image approx. 3 ~5 sec.

USB INFORMATION: Within the LIVE VIEWING, press “ENTER” key in the front panel will present the USB information. **(NOTE: Please confirm that USB Device has plugged into DVR.)**

2.4 CAMERA & MONITOR LOOPING

Here recommend link cameras by sequence to avoid unexpected image broken, from CH1, CH2, CH3, CH4.....

2.5 EXTERNAL ALARM

There are three types of alarms that the system can be configured to handle. They are Motion detection Alarm, External Alarm and Video Loss Alarm.

A. Motion detection Alarm and External Alarm:

When motion detection or External Alarm was triggered, there are 5 possible actions will be taken.

- Changes recording speed as alarm recording speed.
- Monitor will display corresponding full screen alarm channel, it will switch automatic mode to manual mode if buttons pressing activity occurred in 5 seconds.
- Relays can be activated by motion detection or external alarm when turning on.
- External alarm will be recorded in the event list. Motion detection can be set to yes or no.
- The camera title will be transformed into color of yellow when motion is happening, “ALARM” text will show up when external alarm is triggered.

B. Video Loss Alarm:

The default setting of Video Loss alarm is enabled and cannot be changed. Although buzzer action can be disabled, an ALM record will still be added to the Event List that indicates the precise time of video loss.

C.25 PIN D-Sub connector is used for external alarm input. It will accept TTL/CMOS type trigger signals where the **16ch DVR** alarm inputs will be set by signal polarity. It also accepts contact type devices. For example, N.O. relay input, the Alarm Polarity should set to LOW in the ALARM SETUP menu. For N.C. relay input, the Alarm Polarity should set to HIGH in the ALARM SETUP menu.

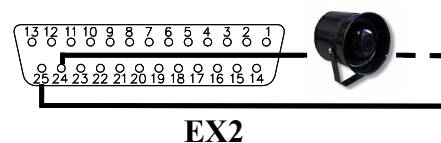
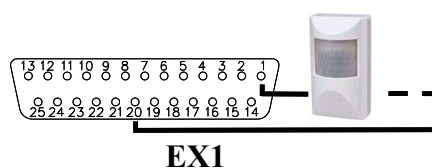
Connector pins 1-16 are for TTL/CMOS compatible alarm signals or for connect one side of the contact type devices. Connector pins 20-21 are for input signal grounding or the remaining side of the contact type devices.

The alarm hold input accept TTL/COMS alarm signal as well as contract device. The connector pin 22 connected to Alarm Reset. The Alarm Reset signal return connects to ground pin (pin 20-21).

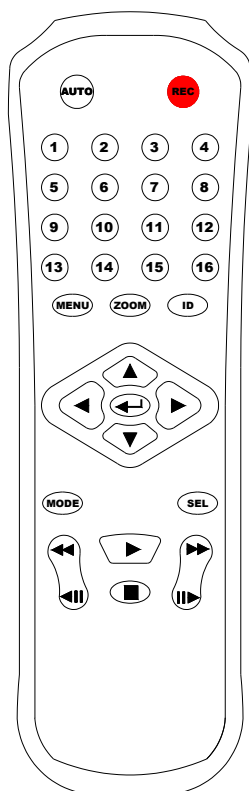
Alarm output is Relay Type, Pin 24 is Normal Close and Pin 25 is Normal Open. These outputs can be used to control external devices.

D-SUB25	PIN	DEFINE
	1-16	Alarm 1-Alarm 16 Camera alarm input
	17-19	N/A
	20, 21	GND (Connecting to Ground, Alarm Input)
	22	Alarm Reset
	23	Relay COM (Alarm Output)
	24	Alarm output, N.C.
	25	Alarm output, N.O.

EXAMPLE 1: Connect with PIR (Passive Infrared) device from ALARM1 INPUT.
EXAMPLE 2: A Normal off (Normal Open) alarm siren at Alarm Output.



2.6 IR REMOTE CONTROL



ITEM	
AUTO/SEQ	Press AUTO/SEQ to activate sequence display of channels
REC	Press REC to start recording and press again for stop recording.
1-16	Press the button to select the channel for full screen.
MENU	To enter or exit main menu page
ZOOM	First select single channel, press zoom to activate function.
ID	**ID setup to control DVR's
▲	Switch split screen & Move upward or increase.
▶	Switch split screen & Move right or increase.
▼	Switch split screen & Move downward or decrease.
◀	Switch split screen & Move left or decrease.
↵	To enter item.
MODE	Split Screen Switch
SEL	Press this button to select the different assembled of camera formats or perform PTZ functions. Moreover, under the 16 split screen and full screen modes, press this button for switching Audio ON/ OFF.
⏮	Fast backward
⏪	Picture by picture backward play
▶	Play video forward
⏩	Fast forward
⏭	Picture by picture forward play
⏹	Stop REC and Playback

****Each DVR can setup its own ID number. The user can control DVR via remote controller by pressing ID button first and then ID number of DVR and ID button again of remote controller.**

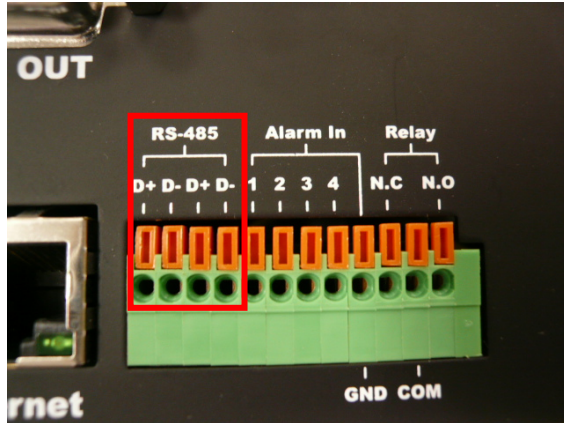
For example, if DVR is set to 1, the user has to press ID button+ 1+ ID button again of remote controller to control this DVR.

****Click ID button first and then number 99 and ID button again to control multi-DVR(s) on the same time.**

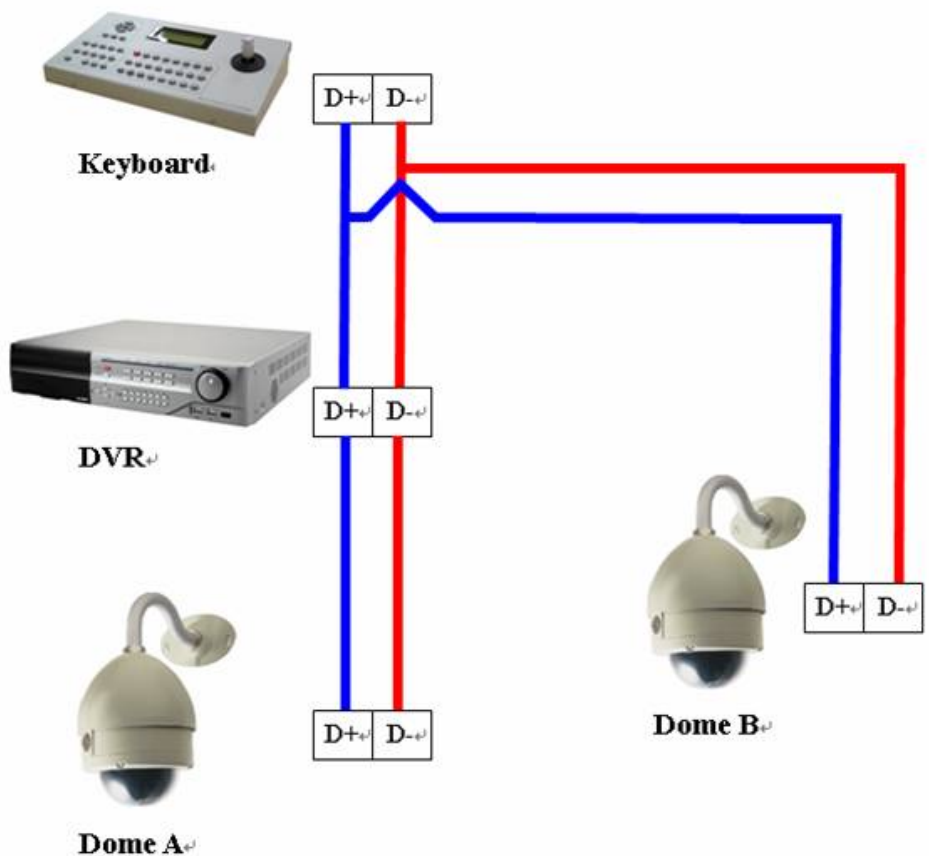
2.7 PTZ (PAN, TILT AND ZOOM) CAMERA

Following diagram for DVR connect between PTZ camera & joystick controller, for DVR to control PTZ camera please make sure the CAMERA ID, BANDRATE (default at 9600 bps) and RS-485 cable.

TWO CORE



Under “Two Core” connection, controller can control speed dome without integrated protocol into DVR. Moreover, one keyboard can connect MAX 256 units of speed dome.

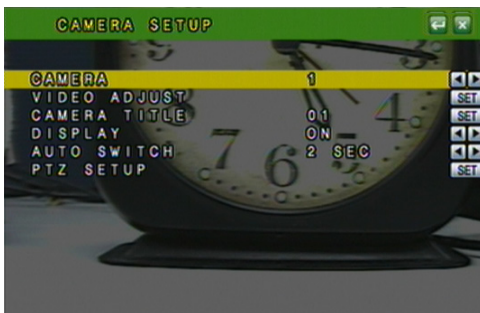


3 SYSTEM SETUP

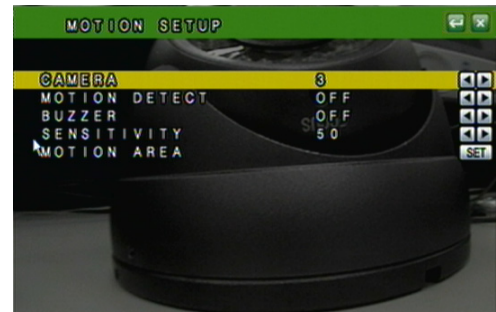
3.1 MENU SETUP INTERFACE(GUI)



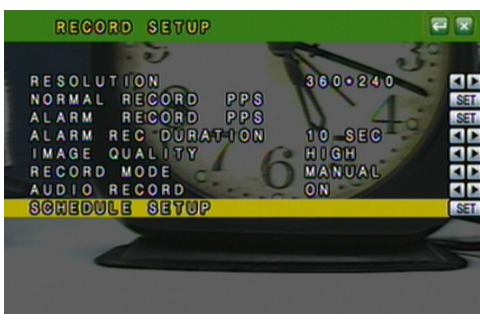
A.  CAMERA SET



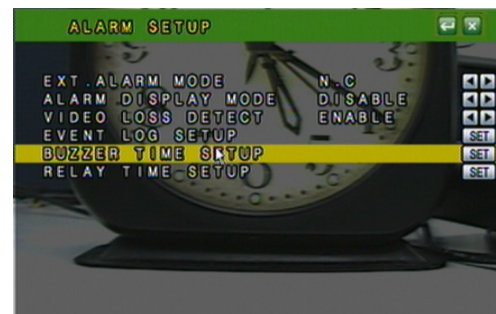
B.  MOTION SETUP



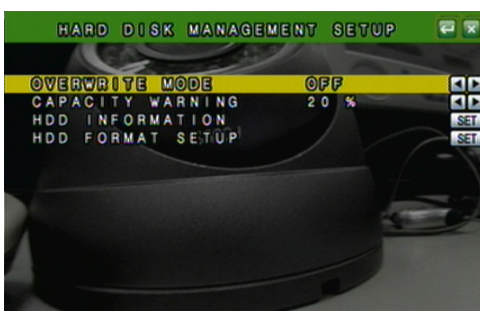
C.  RECORD SETUP



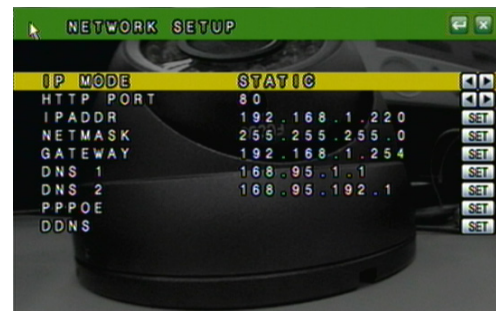
D.  ALARM SETUP



E.  HARD DISK SETUP

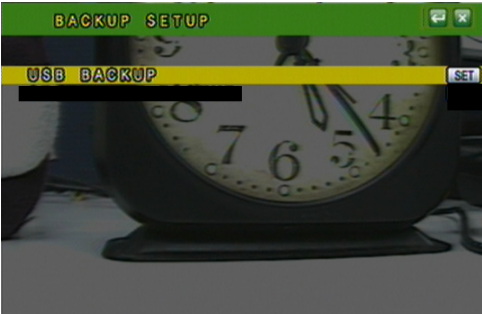


F.  NETWORK SETUP

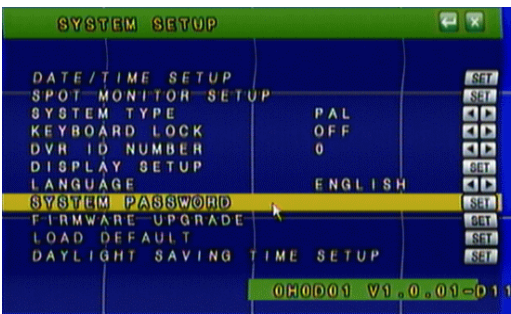




G. BACKUP SETUP



H. SYSTEM SETUP



3.2 LIVE VIEWING AND POP-UP MENU



NOTE : The pop-up menu can be activated by moving the mouse cursor to the bottom of the live viewing screen.



A. GUI MENU BAR

With live viewing mode, press this button to get into the GUI menu.



B. DISK INFORMATION

With live viewing mode, press this button to display disk information.



C. DIGITAL ZOOM

In the live full screen mode, left-click the button of the mouse to pull a range to zoom in or zoom out the image. User can right-click the button of the mouse to disable this function. (NOTE: Using the mouse to operate digital zoom can zoom in to max. 16 times.) Moreover, user can also use ZOOM key on the front panel to perform this function. (First, click ZOOM Key and then click ▲▼◀▶ key to select zoom in or zoom out position. Finally, click ENTER key to complete the setting. Moreover, click ZOOM Key again can disable digital zoom function. Using the panel key to perform zoom in function is fixed at 2 times.)

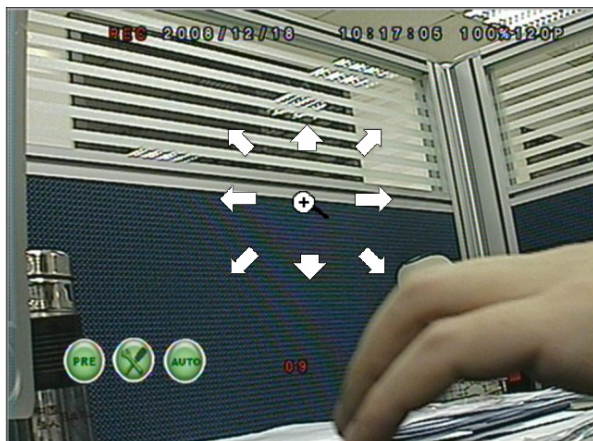


D. PTZ CONTROLLER

Within live-viewing mode, Clicks this button to get into the PTZ setup menu. User can also use PTZ key on the front panel to perform this function. Moreover, user can right-click the button of the mouse or press the PTZ key on the front panel again to exit PTZ Setup.

NOTE : Only for the camera supported PTZ function.

PTZ CONTROL



Press  to process Preset Point setup and press  to exit setting



Under PTZ control mode, press



into PTZ setup menu.

User can also press the “MENU” key on the DVR front panel to get into PTZ setup menu.

To process AUTO function.



Direction key



Zoom In/ Zoom Out



PTZ Preset

Press  button to entry PTZ preset point menu.



SAVE PRESET NUMBER: Press  to save preset point number and its position.

GO TO PRESET NUMBER: Press  to go to the setup preset point number position.

E. AUDIO CONTROL

Press this button to turn the audio on or off °

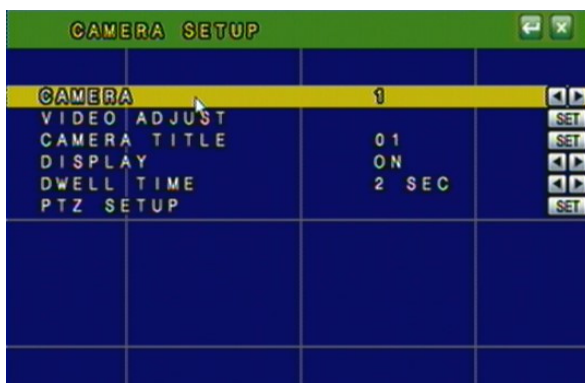
F. DISPLAY CONTROL

Within live-viewing or playback mode, use display control to switch the camera channel.

G. RECORD AND PLAYBACK CONTROL

Same as front panel controller and remote controller.

3.3 CAMERA SETUP

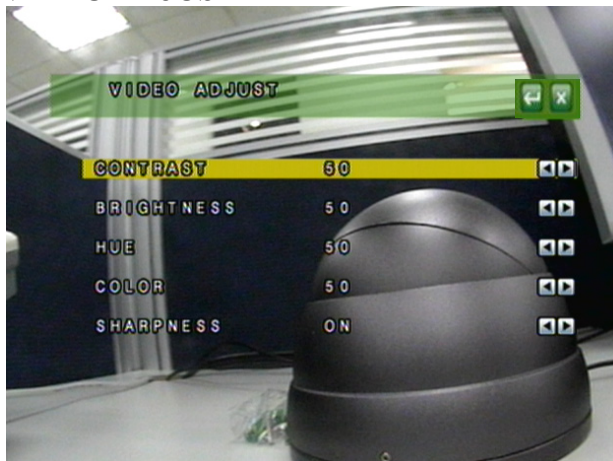


Press ▲ or ▼ to select items.
Press ◀ or ▶ to change values.
Press SET to see more options.

A. CAMERA

Press ◀ or ▶ / mouse wheel to switch channels.

B. VIDEO ADJUST



B-1. CONTRAST

Press ◀ or ▶ / mouse wheel to change contrast level.

B-2. BRIGHTNESS

Press ◀ or ▶ / mouse wheel to change brightness level.

B-3. HUE

Press ◀ or ▶ / mouse wheel to change HUE level.

B-4. COLOR

Press ◀ or ▶ / mouse wheel to change color level.

B-5. SHARPNESS

Press ◀ or ▶ / mouse wheel to change sharpness level.

C. CAMERA TITLE



Use mouse to select and change character.

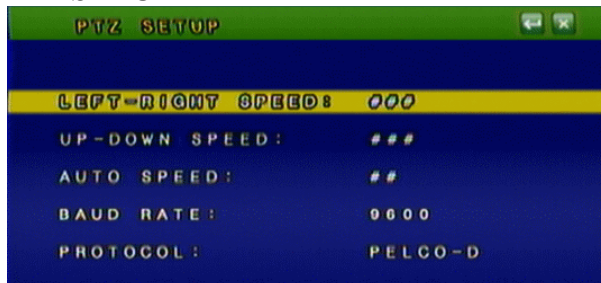
D. DISPLAY

Press ◀ or ▶ to/ mouse wheel change value for the corresponding camera would be displayed on the screen or not.

E. DWELL TIME

Press ◀ or ▶ / mouse wheel to ON/OFF auto switch and the switch sec..

F. PTZ SETUP



LEFT-RIGHT SPEED: Use the mouse wheel to change the left-right speed.

UP-DOWN SPEED: Use the mouse wheel to change the up-down speed.

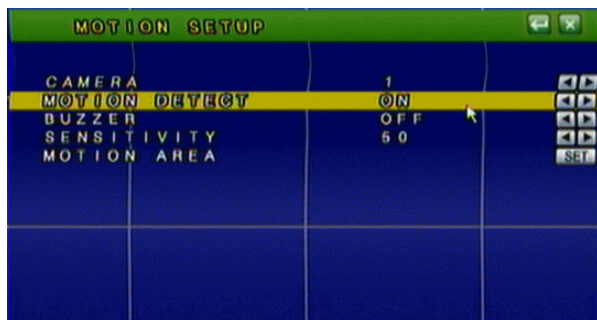
AUTO SPEED: Use the mouse wheel to change the auto patrol speed.

BAUD RATE: Use the mouse wheel to change the BAUD rate °

PROTOCOL: Use the mouse wheel to change the connection protocol.



MOTION SETUP



Press ▲ or ▼ to select items.
Press ◀ or ▶ to change values.
Press SET to see more options.

A. CAMERA

Press ◀ or ▶ / mouse wheel to switch channels.

B. MOTION DETECT

Press ◀ or ▶ / mouse wheel to change value for motion detect function.

C. BUZZER

Press ◀ or ▶ / mouse wheel to change value for buzzer while motion detected.

D. SENSITIVITY

Press ◀ or ▶ / mouse wheel to change sensitivity value from 001 (minimum) to 100 (maximum).

E. AREA SETUP

1. Press **SET** to enter Motion Area Setting. (Note: The default setting of all area is "MOTION ON".)

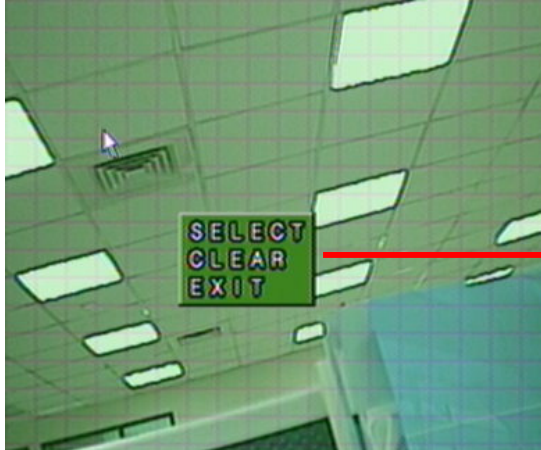


2. Use the mouse to select which block is needed.



The green area shows the area without motion detection.

3. Left-Click the mouse to see more options or exit the setup.



SELECT: Cancel the selected area.

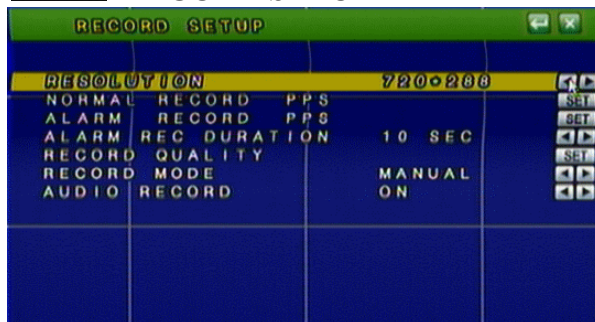
CLEAR: Select the area without motion detection.

EXIT: Exit the motion detection setup.

3.5



RECORD SETUP



Press ▲ or ▼ to select items.

Press ◀ or ▶ to change values.

Press SET to see more options.

A. RESOLUTION

Press ◀ or ▶ / mouse wheel to switch record resolution.

720 x 480 (NTSC)/ 720 x 576 (PAL).

720 x 240 (NTSC)/ 720 x 288 (PAL).

360 x 240 (NTSC)/ 360 x 288 (PAL).

NOTE: If record resolution is altered in here, **DVR will reboot** automatically.

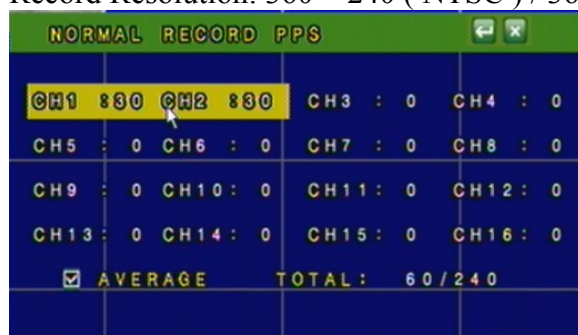
B. NORMAL RECORD PPS

Press **SET** to change the PPS in normal recording. User can click “AVERAGE” to set PPS automatically by system or change the PPS for each channel manually.

Record Resolution: 720 x 480 (NTSC)/ 720 x 576 (PAL)
720 × 240 (NTSC) / 720 × 288 (PAL)



Record Resolution: 360 × 240 (NTSC) / 360 × 288 (PAL)



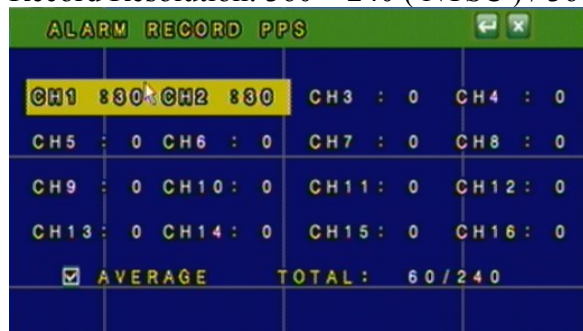
C. ALARM RECORD PPS

Press **SET** to change the PPS in alarm recording. User can click “AVERAGE” to set PPS automatically by system or change the PPS for each channel manually.

Record Resolution: 720 x 480 (NTSC)/ 720 x 576 (PAL)
720 × 240 (NTSC) / 720 × 288 (PAL)



Record Resolution: 360 × 240 (NTSC) / 360 × 288 (PAL)



D. ALARM RECORD DURATION

Press ◀ or ▶ to set dwell time of alarm recording.

E. RECORD QUALITY

Press **SET** to switch image quality of each channel (720 x 480 (NTSC)/ 720 x 576 (PAL); 720 x 240 (NTSC) / 720 x 288 (PAL)) or each two channels (360 x 240 (NTSC) / 360 x 288 (PAL)). User can use mouse wheel to change the image quality of each single channel: LOW/ MEDIUM/ HIGH/ BEST, or use “AVERAGE” to switch the image quality of all channels at once.

Record Resolution: 720 x 480 (NTSC)/ 720 x 576 (PAL)
720 x 240 (NTSC) / 720 x 288 (PAL)



Record Resolution: 360 x 240 (NTSC) / 360 x 288 (PAL)



F. RECORD MODE

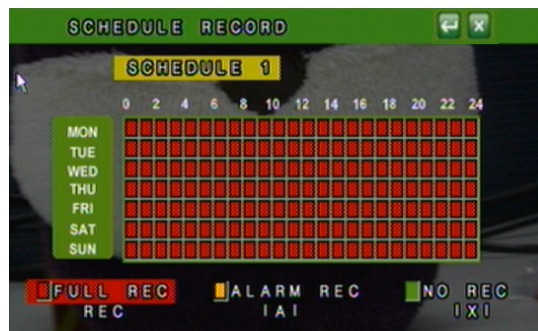
Press ◀ or ▶ to switch record mode to ALWAYS/ MOTION/ SCHEDULE / OFF.

G. AUDIO RECORD

Press ◀ or ▶ to switch AUDIO RECORD ON or OFF.

H. SCHEDULE SETUP

Press **SET** to get into schedule setup menu ◦

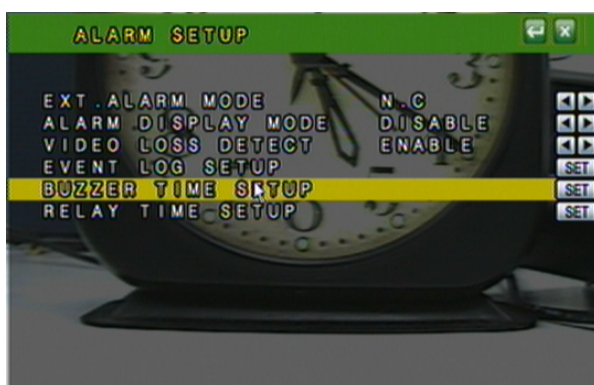


1. Use mouse to select schedule day/ time/ mode.
2. Click  to save change and exit.

3.6



ALARM SETUP



Press ▲ or ▼ to select items.
Press ◀ or ▶ to change values.
Press SET to see more options.

A. EXT. ALARM MODE

Select N.C for “normal close” alarm input, or select N.O for “normal open” alarm input.

B. ALARM DISPLAY MODE

Press ◀ or ▶ / mouse wheel to change value for ALARM DISPLAY MODE with full screen.

C. VIDEO LOSS DETECT

Press ◀ or ▶ / mouse wheel to switch VIDEO LOSS ALARM ON or OFF.

D. EVENT LOG SETUP

Press **SET** to change value for MOTION EVENT / VIDEO LOSS EVENT to ON / OFF.

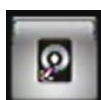
E. BUZZER TIME SETUP

Press **SET** to set dwell time of BUZZER/ ALARM.

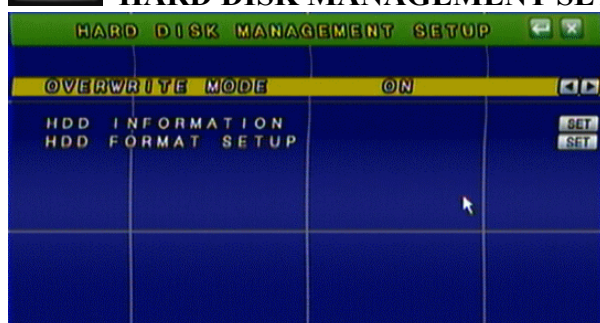
F. RELAY TIME SETUP

Press **SET** to set dwell time of RELAY.

3.7



HARD DISK MANAGEMENT SETUP



Press ▲ or ▼ to select items.
Press ◀ or ▶ to change values.
Press SET to see more options.

A. OVERWRITE MODE

Press ◀ or ▶ to change value OVERWRITE MODE ON or OFF.

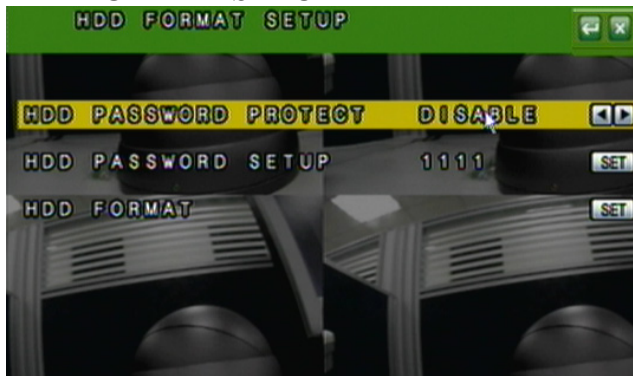
B. CAPACITY WARNING (When Overwrite Mode is OFF, Capacity Warning will enable)

Press ◀ or ▶ to change value to 20/ 15/ 10 or 5% with non-overwrite mode. When LEFT RATIO is below the setting, it will enable AUDIBLE ALARM (If AUDIBLE ALARM of BUZZER of ALARM SETUP is ON).

C. HDD INFORMATION

Press SET to display HDD information.

D. HDD FORMAT SETUP



D-1. HDD PASSWORD PROTECT

Press ◀ or ▶ / mouse wheel to change value for hard disk format password protection.

D-2. HDD PASSWORD

Press **SET** then use mouse to change password.

Default password : 1111

D-3. HDD FORMAT

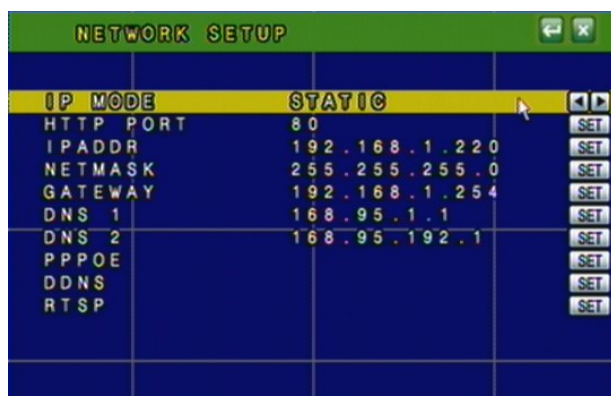
Press **SET** to get into FORMAT setup.

Press YES or NO to execute.

3.8



NETWORK SETUP



Press ▲ or ▼ to select items.
Press ◀ or ▶ to change values.
Press SET to see more options.

A. IP MODE

Press ▲ or ▼ to select items and ◀ or ▶ / mouse wheel to change to STATIC IP or DHCP.

B. HTTP PORT

Press ▲ or ▼ to select items and ◀ or ▶ / mouse wheel to change WEB PAGE PORT.

C. IP ADDR

Press ▲ or ▼ to select items and **SET** to change IP ADDRESS.

D. NETMASK

Press ▲ or ▼ to select items and **SET** to change SUBNET MASK.

E. GATEWAY

Press ▲ or ▼ to select items and **SET** to change Default GATEWAY.

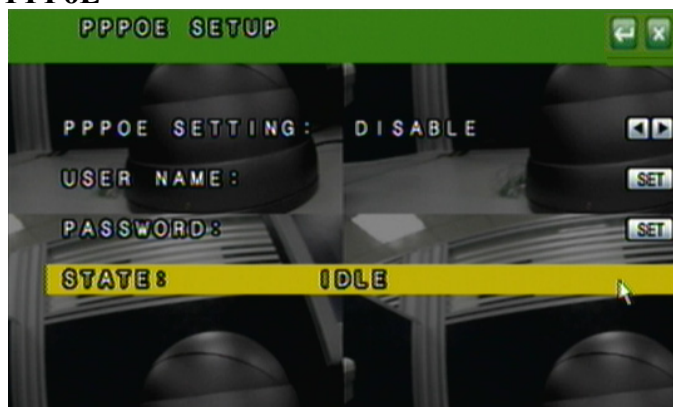
F. DNS1

Press ▲ or ▼ to select items and **SET** to change DNS.

G. DNS2

Press ▲ or ▼ to select items and **SET** to change OTHER DNS.

H. PPPoE



H-1. PPPoE SETTING

Press ◀ or ▶ / mouse wheel to ENABLE / DISABLE PPPoE.

H-2. USER NAME

Use mouse to setup user name for ADSL account.

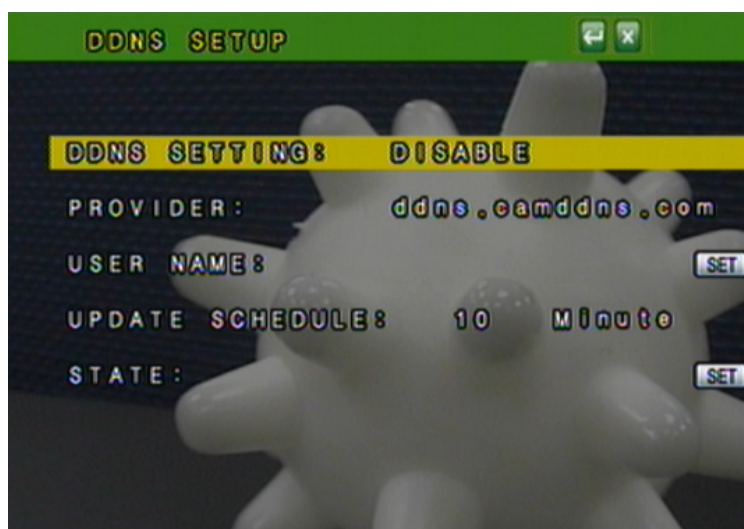
H-3. PASSWORD

Use mouse to setup password for ADSL account.

H-4. STATE

Press SET to display status of PPPoE ◦

I. DDNS SETUP



I-1.DDNS SETTING : Press ◀ or ▶ / mouse wheel to set DDNS ENABLE / DISABLE.

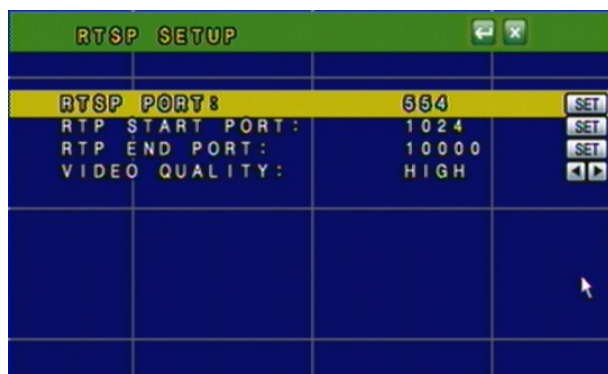
I-2 PROVIDER : Press ◀ or ▶ / mouse wheel to select DDNS provider.

I-3 USER NAME : Press **SET** to setup user name.

I-4 UPDATE SCHEDULE : Use **SET** to dwell time of updating schedule.

I-5 STATE : Press **SET** to display status of DDNS ◦

J. RTSP SETUP



J-1. RTSP PORT: Press **SET** to setup RTSP port. The default value is 554.

J-2. RTP START PORT: Press **SET** to setup RTP start port.

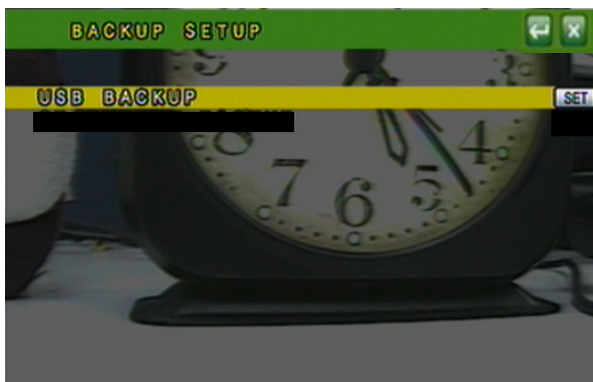
J-3. RTP END PORT: Press **SET** to setup RTP end port.

J-4. VIDEO QUALITY: Press ◀ or ▶ / mouse wheel to select video quality. There are BEST, HIGH, STANDARD, MEDIUM & LOW five options.

3.9



BACKUP SETUP



NOTE: *For function stability, Ethernet remote control function (IE) will be stopped when processing backup function.

*USB DEVICE BACKUP : 3.2MB/ per sec.

A. USB BACKUP

Due to each USB device with different USB driver ICs, their compatibilities differ, too. This system is compatible with most of USB flash memory. If there is compatible issue, please refer to **APPENDIX B**. In addition, please format USB flash memory with FAT32.

BEFORE BACKUP

- A. In live viewing mode, insert USB device into a USB port of the DVR.
- B. Get into playback mode by PLAY TIME SEARCH or EVENT LIST SEARCH and play back videos that are going to be as backup.

VIDEO BACKUP

In multiplexer or full screen mode, press  to start backup and press  to end backup. The system will backup automatically.

PICTURE BACKUP

In multiplexer or full screen mode, press  and press . The system will start backup picture by picture.

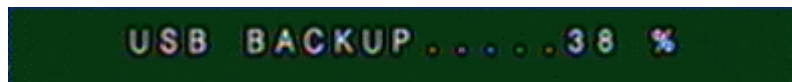
USB BACKUP MENU



- User can use the mouse wheel to change the backup Start/ End time .



- Click  to start backup, the total process will be shown on screen.



BACKUP FILE NAME

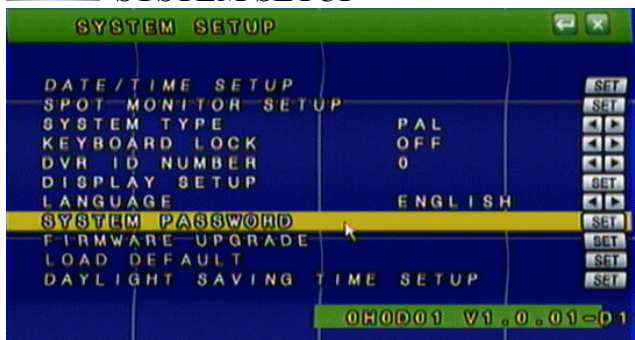
Each backup file will be named as START TIME.

EXAMPLE: 174624.264 is 17:46:24

AFTER BACKUP

After backup, the system will copy "R6VIEWER.EXE" automatically on USB device for the user to play back backup file.

3.10 SYSTEM SETUP



Press ▲ or ▼ to select items.
Press ◀ or ▶ to change values.
Press SET to see more options.

A. DATE / TIME SETUP

Press **SET** to set DATE / TIME.

A-1. TIME

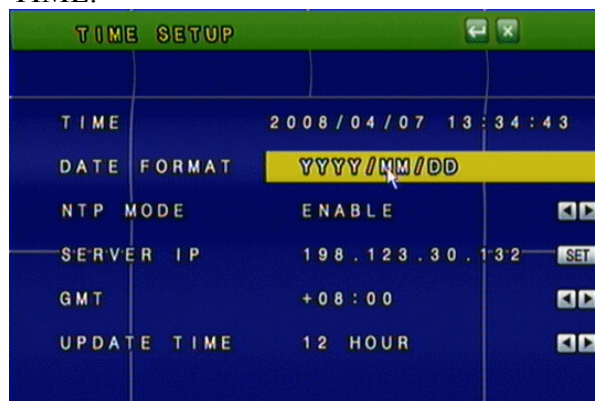
Use mouse wheel to change DATE/ TIME.

A-2. DATE FORMAT

Use mouse wheel to change DATE. There are DD/MM/YYYY, YYYY/MM/DD and MM/DD/YYYY three modes.

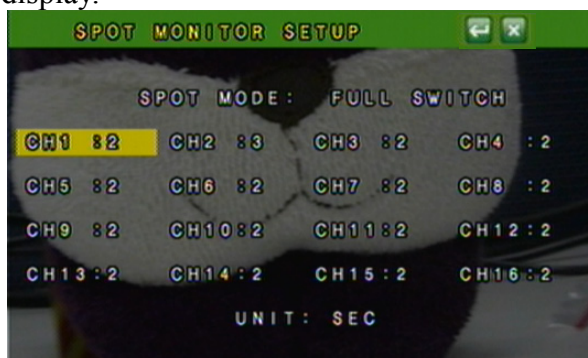
A-3. NTP MODE

Use mouse wheel to change NTP. When NTP is enable, use **SET** to change SERVER IP and use ◀ or ▶ / mouse wheel to change GMP and UPDATE TIME.

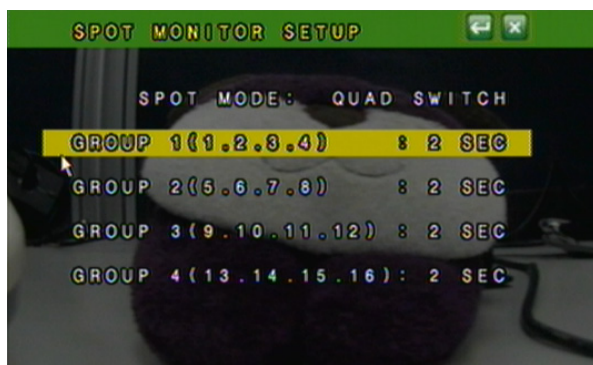


B. SPOT MONITOR SETUP

There are FULL SWITCH、QUAD SWITCH and OFF options for spot monitor display.



FULL SWITCH MODE



QUAD SWITCH MODE

C. SYSTEM TYPE

Press ◀ or ▶ / mouse wheel to change the system type. Moreover, **DVR will reboot** while changing the system type.

D. KEYBOARD LOCK

Press ◀ or ▶ / mouse wheel to switch ON/ OFF. There are OFF, TYPE 1 and TYPE 2 three options.

OFF : UNLOCK.

TYPE 1 : Only can switch split screen and full screen. The user can operate AUTO and MENU functions as well. However, the password has to be filled in to implement playback mode.

TYPE 2 : LOCK (Except MENU button). The password has to be filled in to implement playback mode.

After KEYBOARD LOCK mode setup, please set up **PASSWORD**

Without password, un-authorized users could access into SYSTEM SETUP and make changes of settings easily.

E. ID NUMBER

Press ◀ or ▶ / mouse wheel to change values.

ID NUMBER is required to make difference of each DVR.

F. DISPLAY SETUP

Press SET to ENABLE or DISABLE display of CAMERA TITLE / DVR STATUS / DATE / TIME.

G. LANGUAGE

Press ◀ or ▶ to change on-screen-display (OSD) language.

H. PASSWORD PROTECTION

Press ▲ or ▼ to select items and ◀ or ▶ to change values.

Default password: 1111.

I. FIRMWARE UPDATE

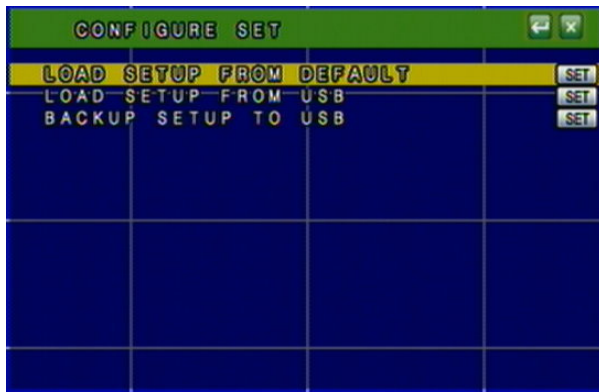
Press **YES** to start firmware update. After updated, the DVR will reboot automatically. At this moment, please do not turn off the DVR manually.

NOTE: 1. Please format USB flash memory with FAT32.

2. For function stability, we suggest user to STOP recording function before processing firmware update function.

J. LOAD DEFAULT

Press **SET** button to entry CONFIGURE SET screen. There are LOAD SETUP FROM DEFAULT, LOAD SETUP FROM USB and BACKUP SETUP TO USB three parts.



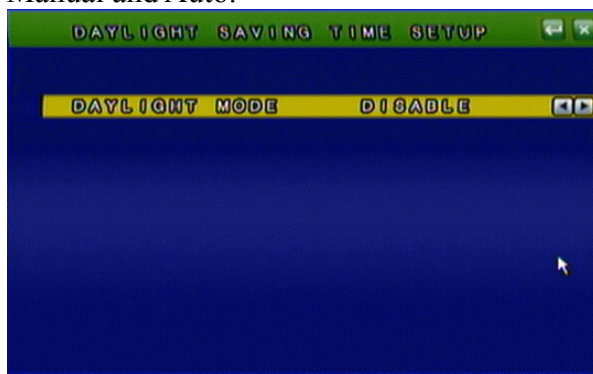
J-1. LOAD SETUP FROM DEFAULT: Press **SET** button to load the setting back to factory default.

J-2. LOAD SETUP FROM USB: Press **SET** button to load the pen drive setting to the current DVR.

J-3. BACKUP SETUP TO USB: Press **SET** button to backup the current DVR setting into pen drive.

K. DAYLIGHT SAVING TIME SETUP

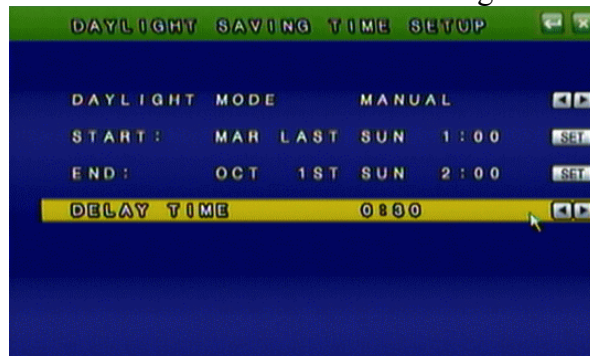
Press ◀ or ▶ / mouse wheel to change the DAYLIGHT MODE option: Disable, Manual and Auto.



K-1. MANUAL MODE

Use **SET** to change the Day Light Saving start and end time.

Press ◀ or ▶ / mouse wheel to change DELAY TIME



K-2. AUTO MODE

Press ◀ or ▶ / mouse wheel to change CITY option. Different CITY will have different START, END and DELAY TIME.



4 DVR PLAYBACK



Click the playback button on the pop-up menu.

Note: the pop-up menu can be activated by moving the mouse cursor to the bottom of the live viewing screen.

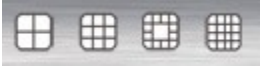
Note: Under playback mode, it will output sound when switch to full screen mode.



Live-Time Image

Note: Under 13 split screen mode, user can see the live-time image from the middle channel and select the channel number by using mouse wheel.

- A.  **DISK INFORMATION**
With playback mode, press this button to display disk and pen drive information.
- B.  **RECORD BACKUP**
With playback mode, press this button to backup record (.264 video backup) and press this button again to finish backup. For performing the single image backup (.Y42 single image backup), press  first and then click this button to backup the necessary image.
- C.  **AUDIO CONTROL**
Press this button to turn the audio on or off

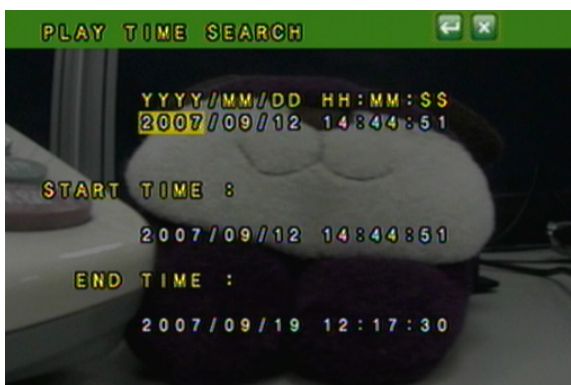
- D.  **DISPLAY CONTROL**
Within playback mode, use display control to switch the camera channel.
- E.  **RECORD AND PLAYBACK CONTROL**
Same as front panel controller and remote controller.

4.1 TIME SEARCH

Double click Left button of mouse to trigger play time search.



Please set the start and end time to search.



4.2 EVENT SEARCH

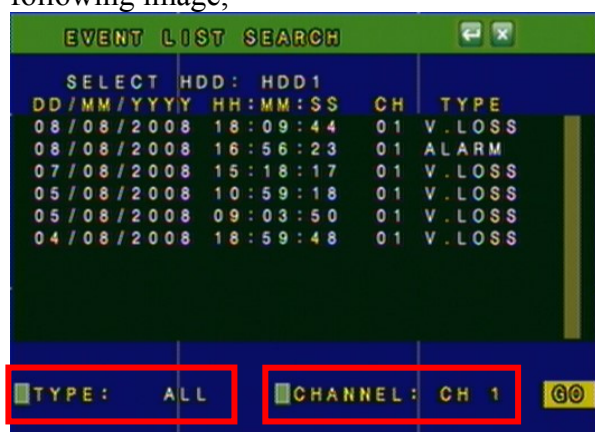
Double click Left button of mouse to trigger event search.



Please select the event to playback ◦



Moreover, use TYPE and CHANNEL two options to perform the advanced search. As the following image,



NOTE: Display the type of the event as follows.

POWER	If the DVR got power loss, it will record the date and time of rebooting.
RECORD	If REC. button has been pressed, it will record the date and time in the event list.
V.LOSS	When a camera signal is lost, it will record the date, time, and corresponding channel. Moreover, the  icon will display on the corresponding channel.
ALARM	When ALARM is triggered, it will record the date, time, and corresponding channel. Moreover, the  icon will display on the corresponding channel.
MOTION	When MOTION is detected, it will record the date, time, and corresponding channel. Moreover, the  icon will display on the corresponding channel.

5 BACKUP PLAYBACK

SYSTEM REQUIREMENT

CPU: Intel Celeron 1.6G

MEMORY: 256MB.

VGA: 32MB

VGA RESOLUTION: 1024 x 768.

OS: Windows XP / 2000

SUGGESTED REQUIREMENT

CPU: Intel P4 2.8G

MEMORY: 512MB or above

VGA: 64MB or above

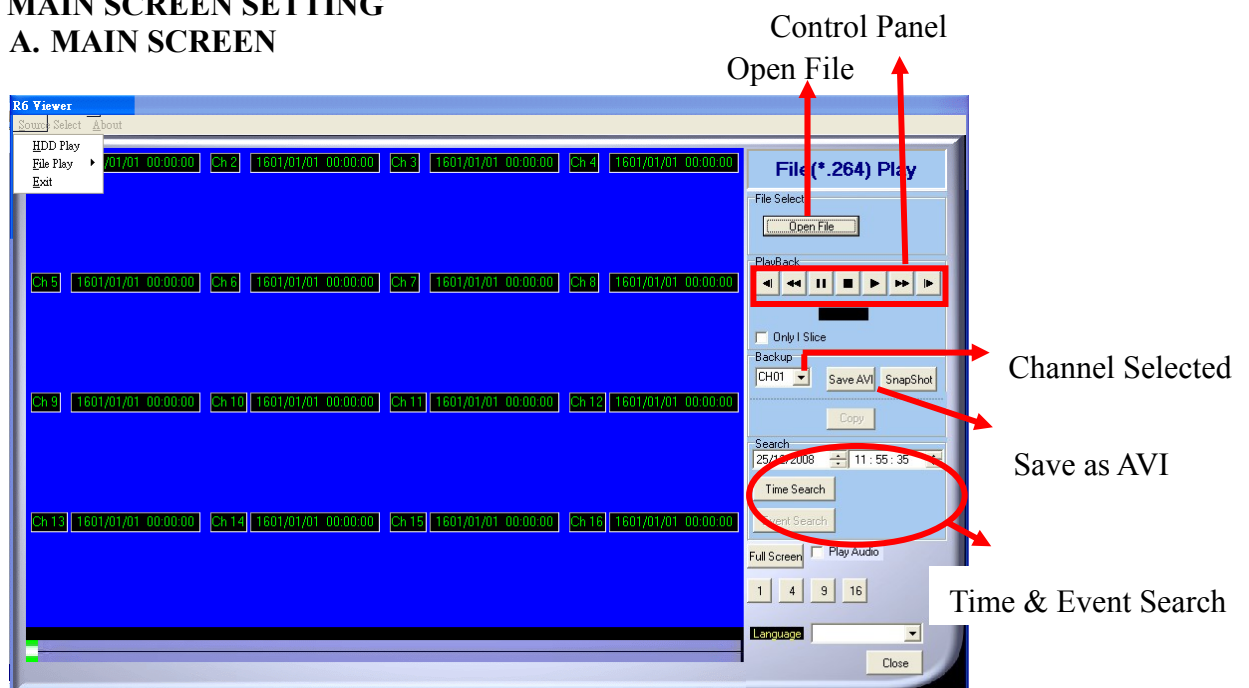
VGA RESOLUTION: 1024 x 768

OS: Windows XP / 2000

NETWORK BANDWIDTH: Upload Speed is 256kbps or above

5.1 MAIN SCREEN SETTING

A. MAIN SCREEN



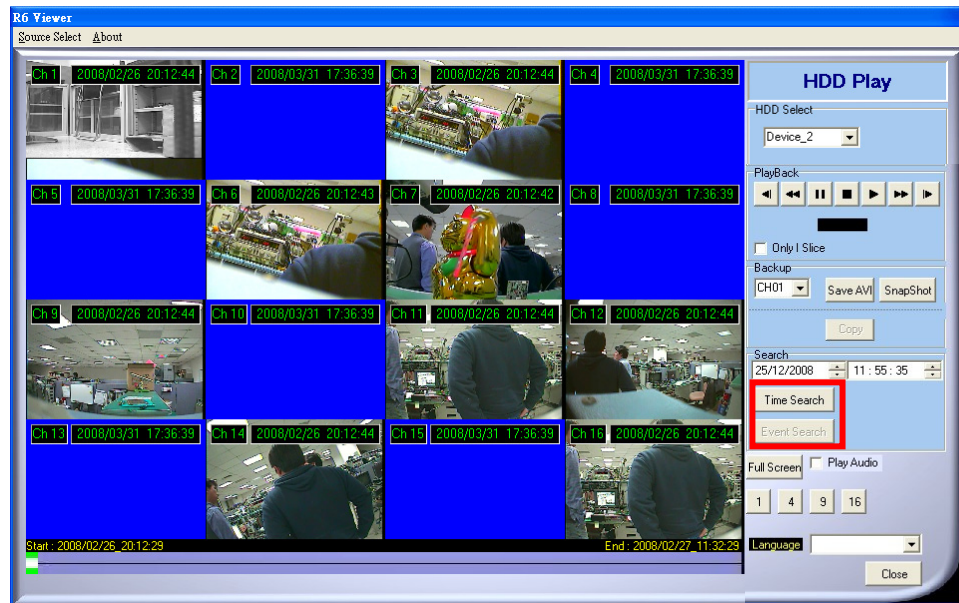
B. HDD PLAY

Play about all the data from the Hard disk of DVR or perform the specific Time and Event Search to play.

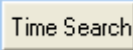
Note: Remove the DVR HDD and connect to the PC first. Then, use DVR player



(R6Viewer.exe) to play the data of HDD. DVR player (R6Viewer.exe) can be attained from the attached CD or via the Internet; moreover, while performing USB backup, the software will be built automatically as well.



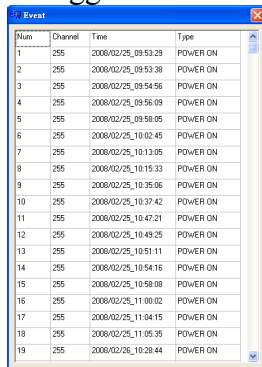
B-1. TIME SEARCH

Insert search Date and Time and then click  to play all the searched film.



B-2. EVENT SEARCH

It will display all the events which are reserved within the DVR HDD after press **Event Search** (Shown in the following) and double click left button of mouse to trigger event.



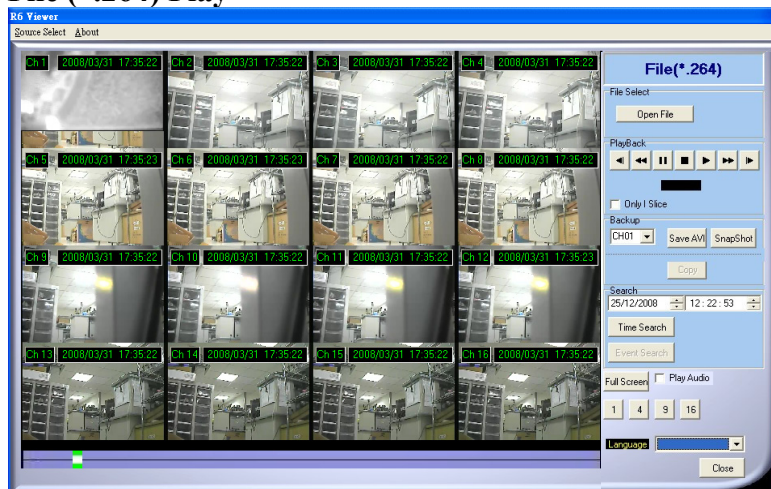
Num	Channel	Time	Type
1	255	2008/02/25_09:53:29	POWER ON
2	255	2008/02/25_09:53:38	POWER ON
3	255	2008/02/25_09:54:56	POWER ON
4	255	2008/02/25_09:56:09	POWER ON
5	255	2008/02/25_09:58:05	POWER ON
6	255	2008/02/25_10:02:45	POWER ON
7	255	2008/02/25_10:13:05	POWER ON
8	255	2008/02/25_10:15:33	POWER ON
9	255	2008/02/25_10:35:06	POWER ON
10	255	2008/02/25_10:37:42	POWER ON
11	255	2008/02/25_10:47:21	POWER ON
12	255	2008/02/25_10:49:25	POWER ON
13	255	2008/02/25_10:51:11	POWER ON
14	255	2008/02/25_10:54:16	POWER ON
15	255	2008/02/25_10:58:08	POWER ON
16	255	2008/02/25_11:00:02	POWER ON
17	255	2008/02/25_11:04:15	POWER ON
18	255	2008/02/25_11:05:35	POWER ON
19	255	2008/02/25_10:28:44	POWER ON



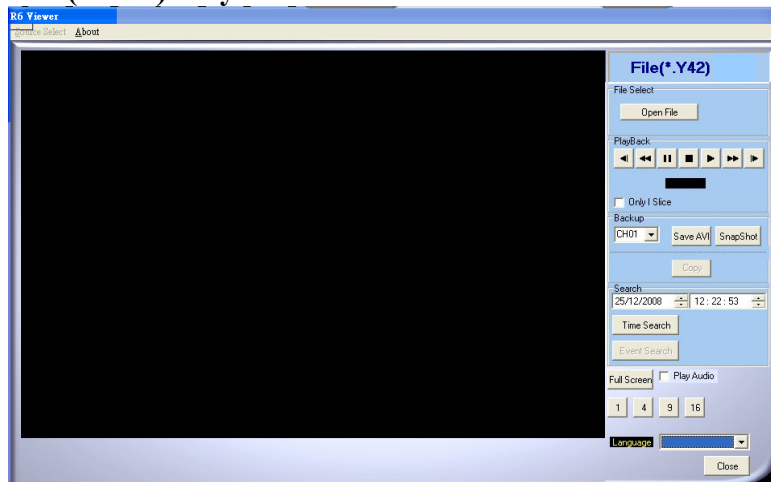
R6 Viewer.exe

(R6 Viewer.exe) can play not only DVR H.D.D. but also the *.264 and *.Y42 files which are reserved within the data storage devices. (i.e. CD/DVD disc, pen drive and the PC H.D.D which the data backup from DVR H.D.D)

C. File (*.264) Play

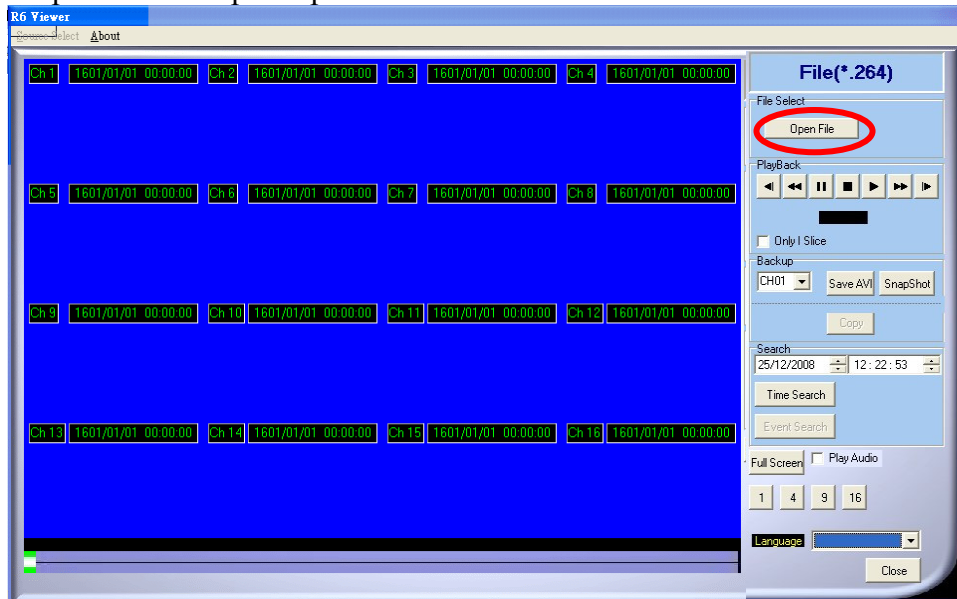


D. File (*.Y42) Play

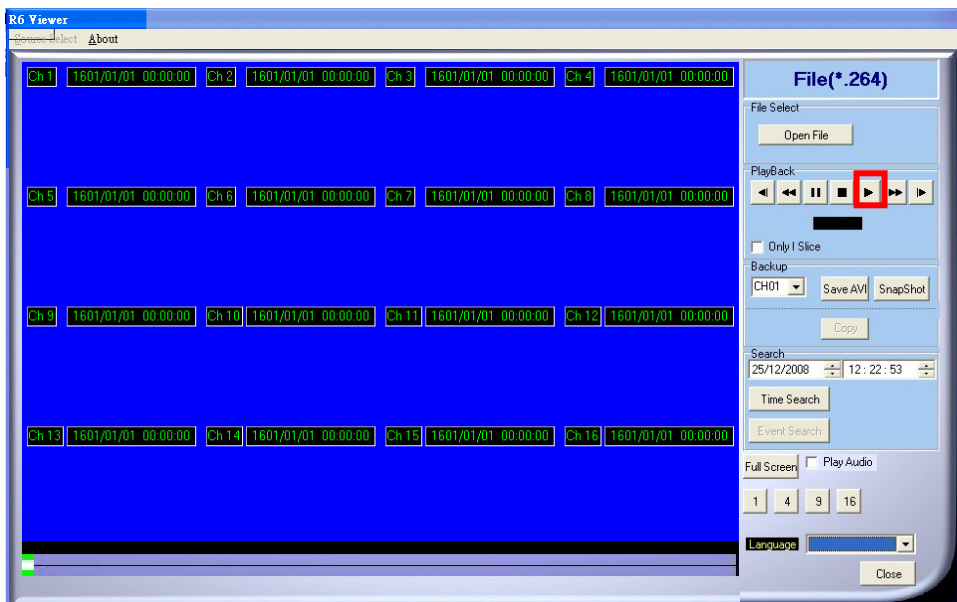


5.2 CD/DVD BACKUP PLAYBACK

- A. Insert the CD/DVD disk into CD/DVD ROM, the software will auto pop out, and select "Open File" and pick up the file.



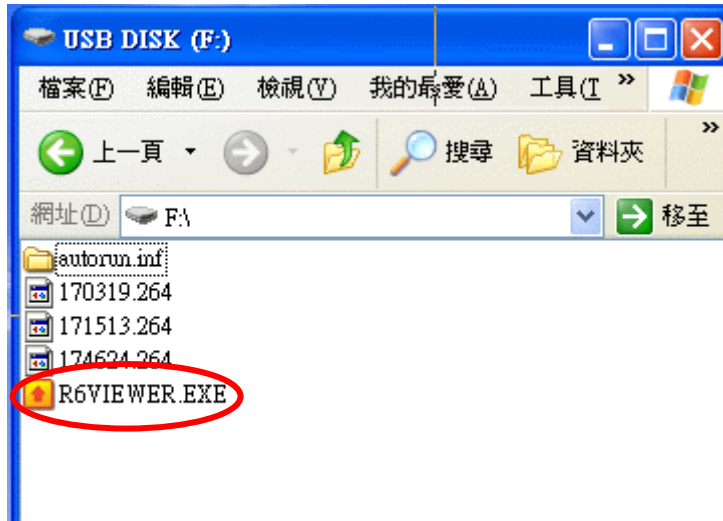
- B. Press “” button to play the video.



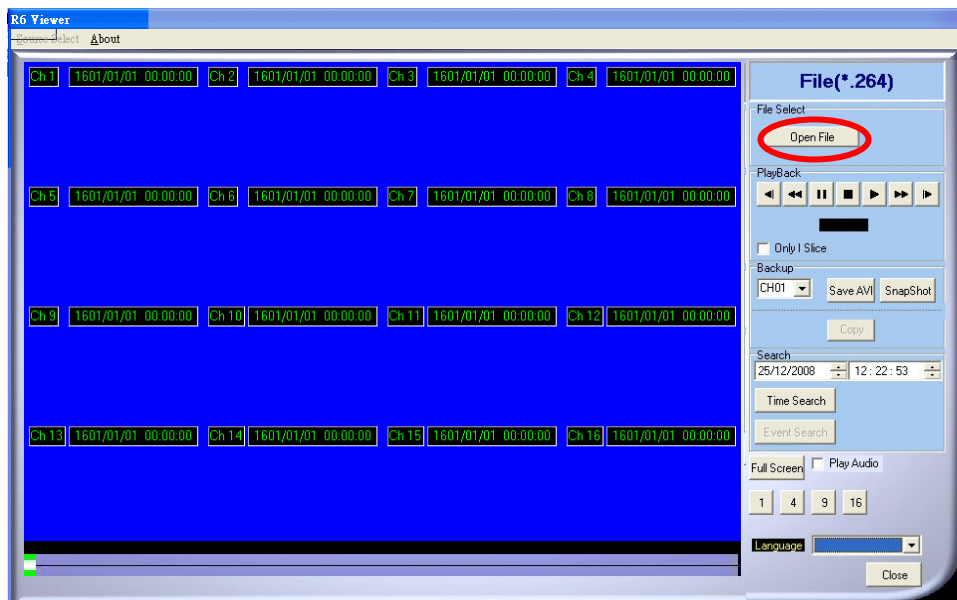
5.3 USB & LOCAL BACKUP FILE PLAYBACK

A. Plug the USB disk into PC or check the local backup folder.

If using USB mode, please double click the player.exe from the pop-up diagram. (As below)

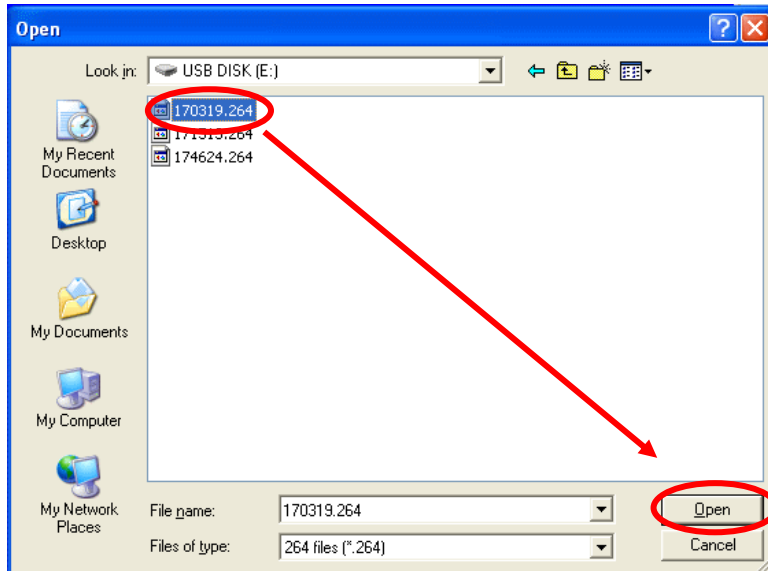


B. The play backup program would appear on the screen, select "Open File".

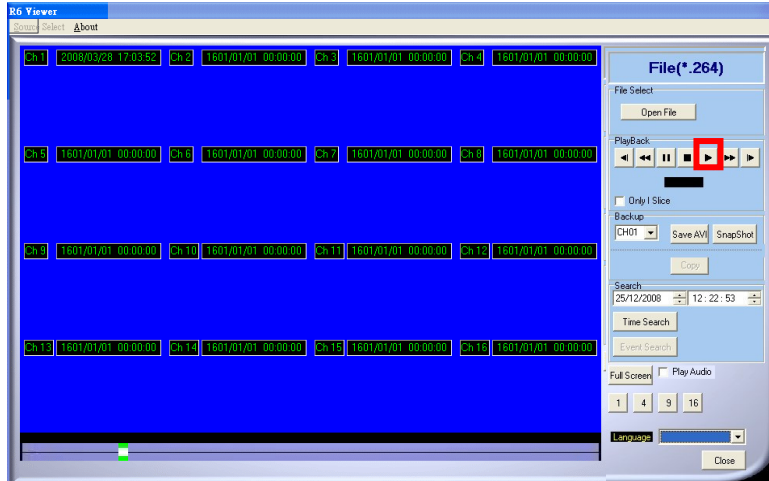


- C. Open the USB disk located driver letter. (Example E:) or the local backup folder, and pick the file to playback.

The backup file will named as the time when backup, as like:
170319.264 will be 17:03:19

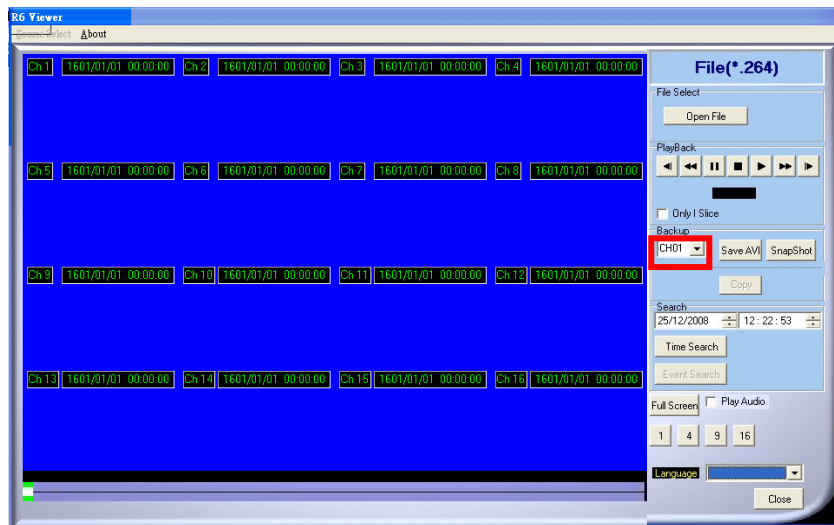


- D. Press the play icon to play the video or still picture.



5.4 BACKUP FILE TO AVI

A. Please select specific channel to backup.



B. During video playback mode please press AVI bottom  to start.

C. Make up a filename and path than press  bottom to start AVI backup.

D. Press AVI bottom  to finish backup.

6 NETWORK VIEWING & PLAYBACK

SYSTEM REQUIREMENT

CPU: Intel Celeron 1.6G

MEMORY: 256MB.

VGA: 32MB

VGA RESOLUTION: 1024 x 768.

OS: Windows XP / 2000

SUGGESTED REQUIREMENT

CPU: Intel P4 2.8G

MEMORY: 512MB or above

VGA: 64MB or above

VGA RESOLUTION: 1024 x 768

OS: Windows XP / 2000

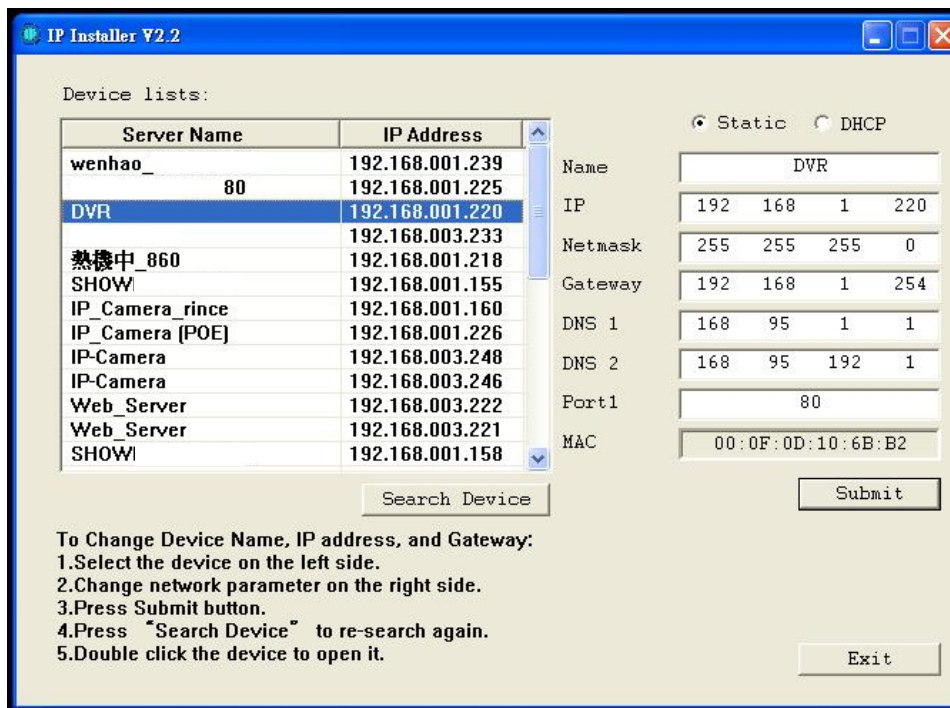
NETWORK BANDWIDTH: Upload Speed is 256kbps or above

6.1 IP ADDRESS SETUP ON PC SITE

Install cameras inside in LAN or use network cable to connect with PC. This is for IPInstallerEng.exe to set up IP address of cameras. If OS is Windows XP SP2 or above, the following Windows Security Alert will popup. Then, please click on **Unblock**.

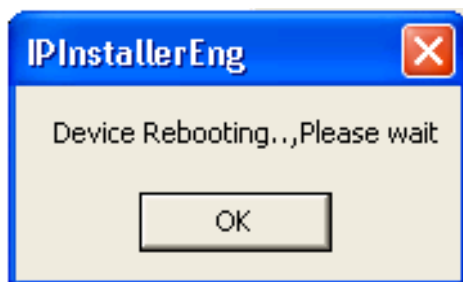


Then, IPInstallerEng.exe will popup:
DVR default IP address is 192.168.1.220



NOTE: Please input correct network parameters without blank spaces.

On Device Lists, it lists all servers. Click on one server and then its IP setting will show on the right side. After editing the parameters and clicking on Submit, the following dialogue box will popup. And, it will reboot the device with new parameters.

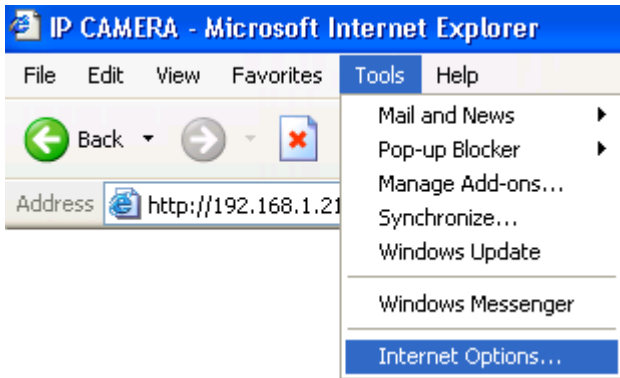


6.2 OPTIONAL MICROSOFT INTERNET EXPLORER SETUP

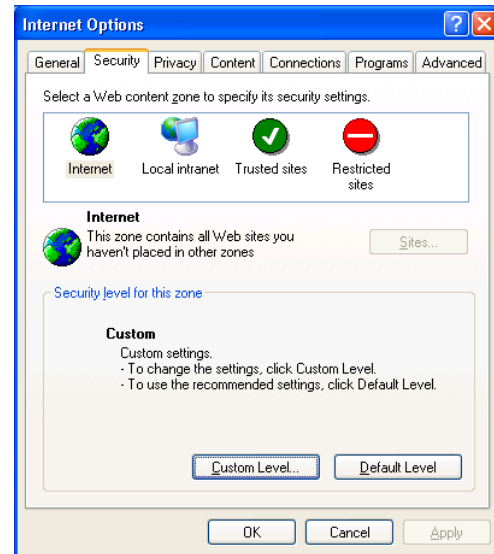
OPTION 1: DISABLE ACTIVEX WARNING

- IE → Tools → Internet Options → Security → Custom Level → Security Settings → Download unsigned ActiveX controls → Enable or Prompt (recommend).
- IE → Tools → Internet Options → Security → Custom Level → Security Settings → Initialize and script ActiveX controls not marked as safe → Enable or Prompt (recommend).

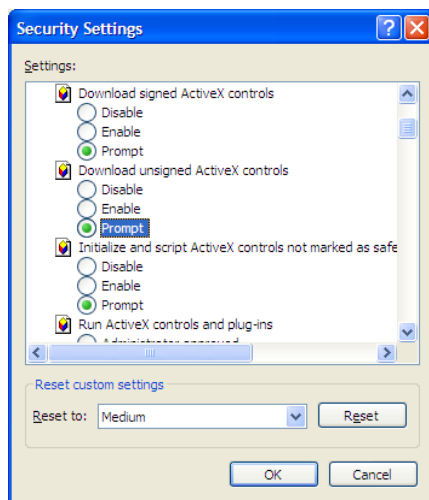
1



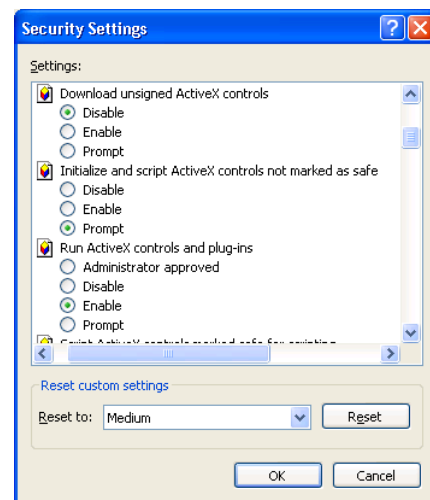
2



3

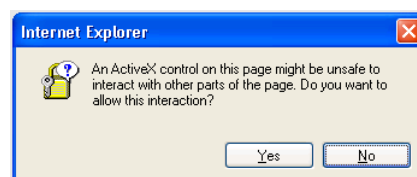


4



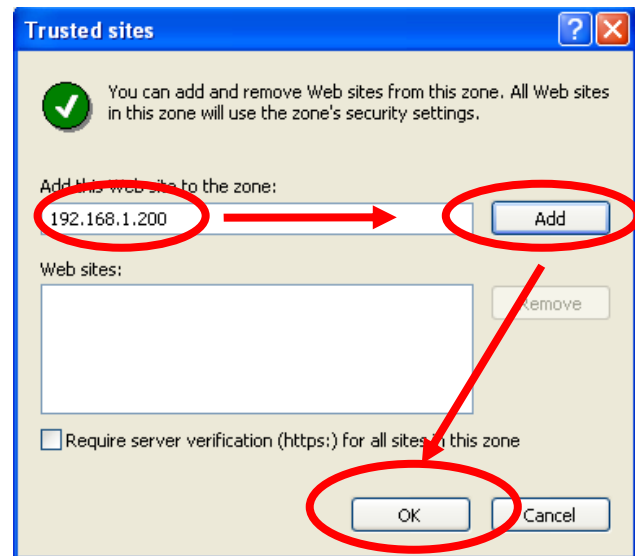
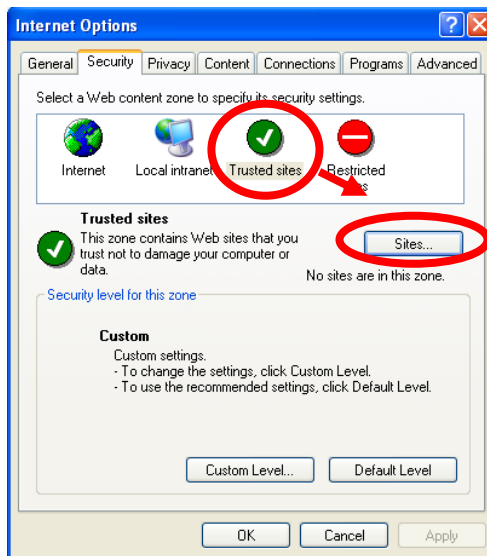
5

Above three options are all based on select as the prompt.
As indicated in the dialogue box. Please select "YES."



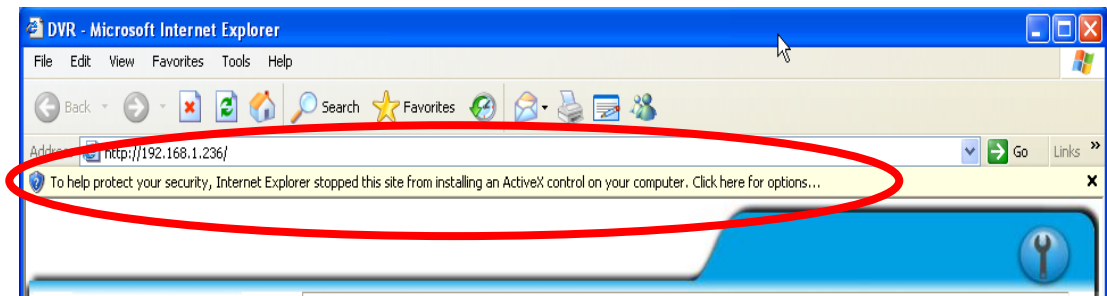
OPTION 2: ADD TO TRUSTED SITES

IE → Tools → Internet Options → Security → Trusted sites → Sites

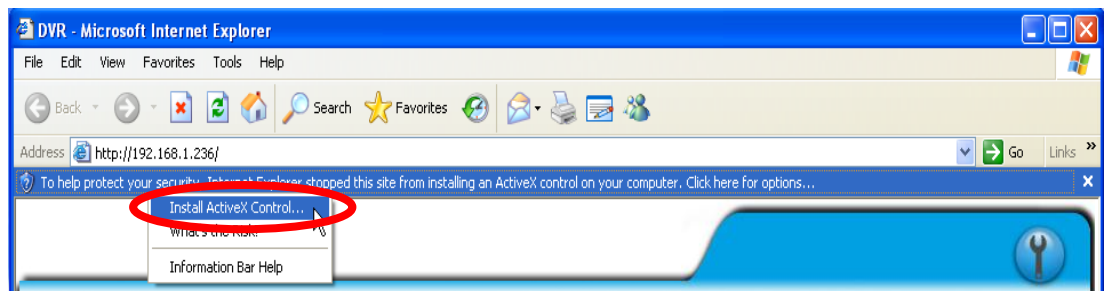


6.3 LOGIN

A. INSTALL ACTIVEX

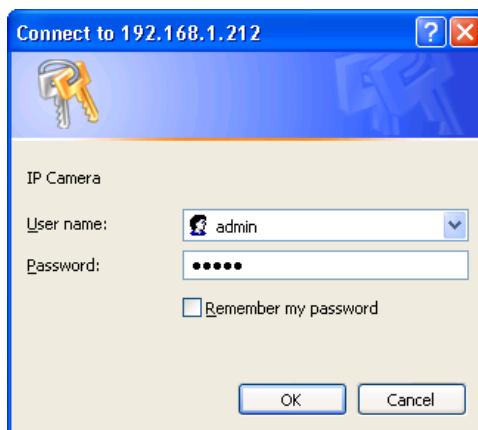


B. START INSTALL ACTIVEX



C. ACCOUNT & PASSWORD LOGIN

After IP setup and connect to network or LAN, type IP address on IE Browser directly. The following User name & Password Login window will popup.

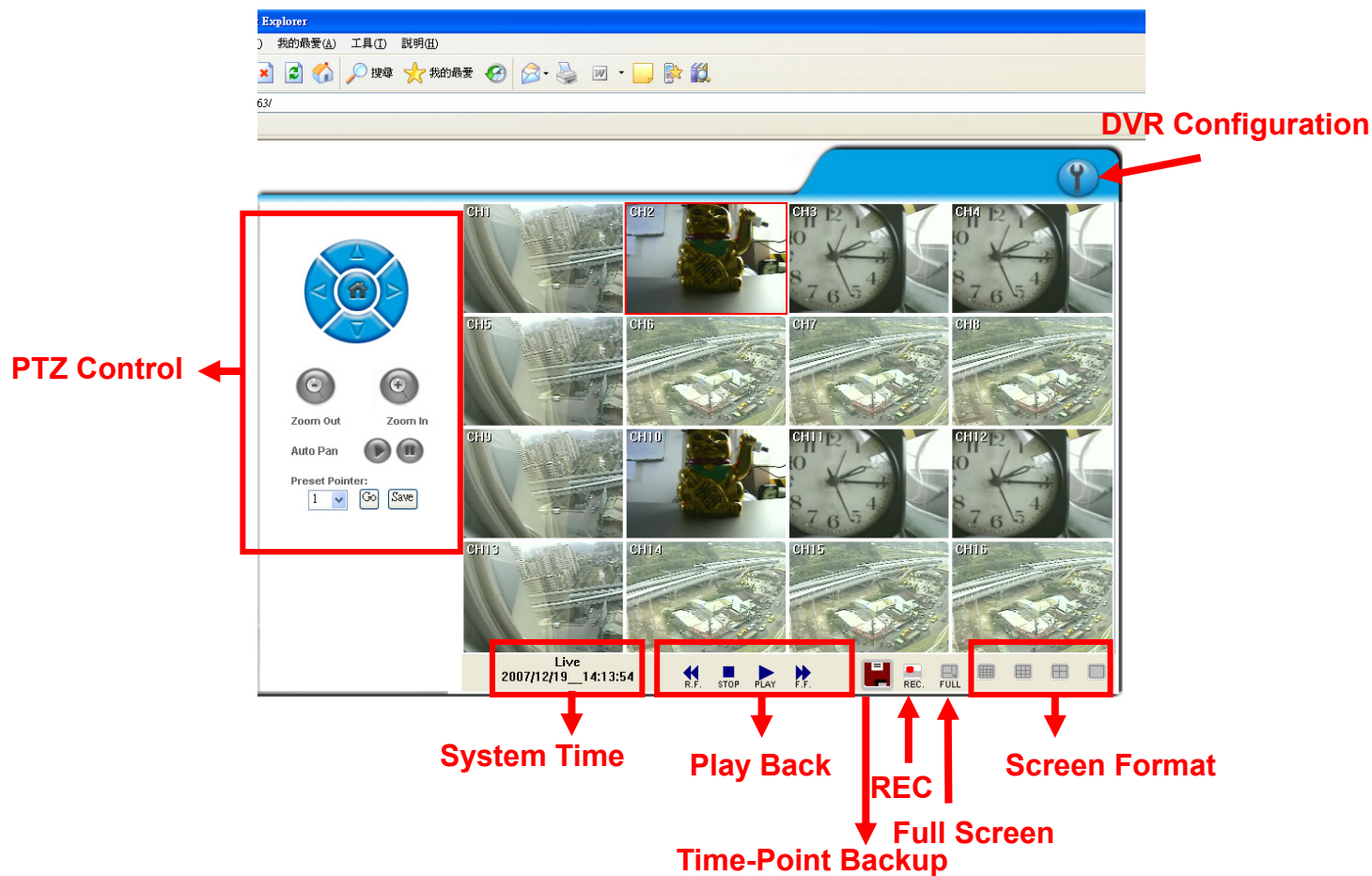


Default user name: admin

Default password: admin

6.4 REMOTE CONTROL

LIVE VIEWING

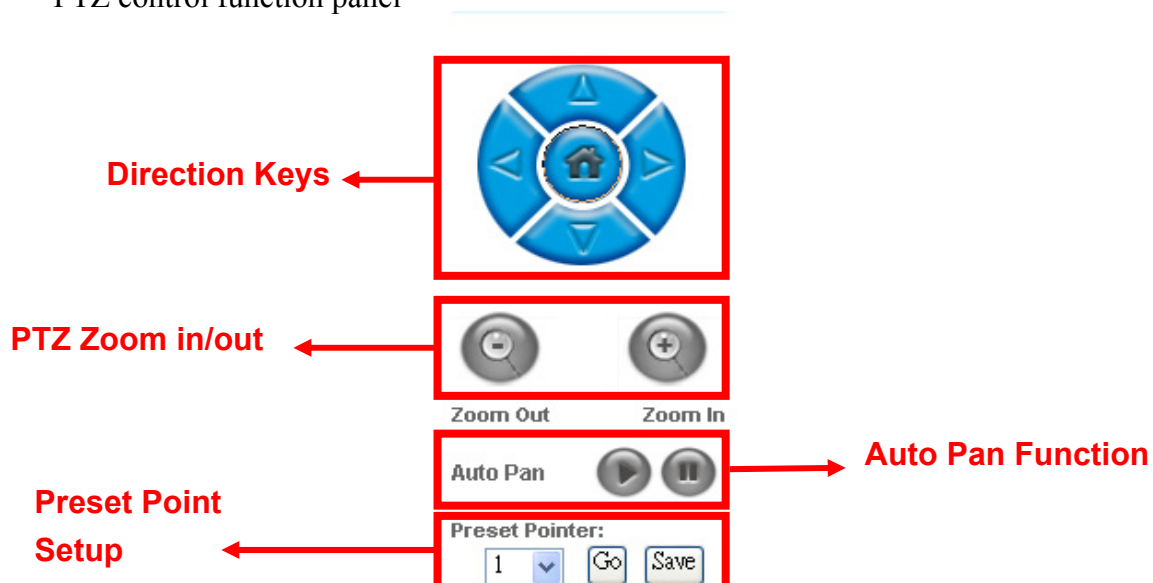


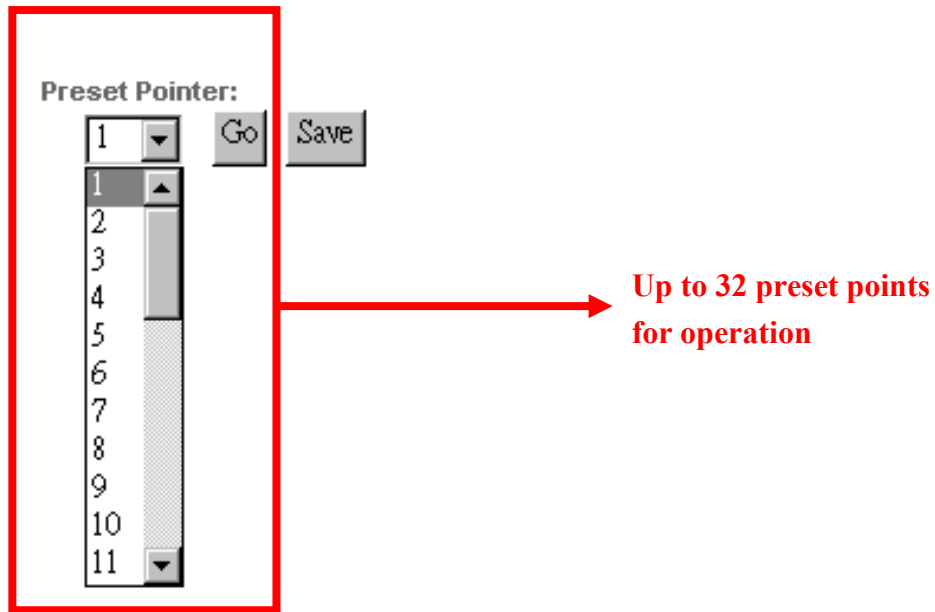
A. DVR Configuration

Get into DVR network menu.

B. PTZ Control

PTZ control function panel





C. SYSTEM TIME

Live viewing mode: The current live viewing time.

D. SCREEN FORMAT

Switch screen format and click twice to switch different channels with full screen.

E.  **Full Screen.** Click again to return.

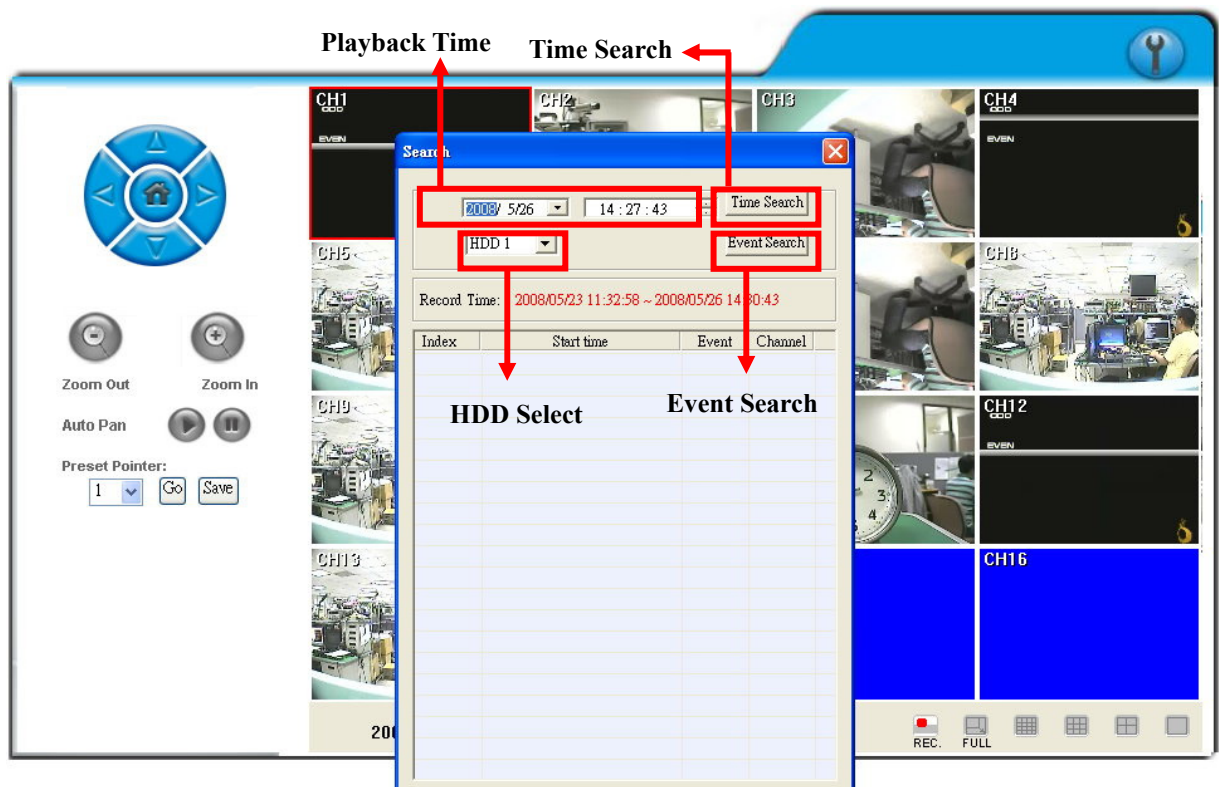
F.  **REC.** Videos are saved as AVI file.

G.  **Playback**

H.  **Time-Point Backup**

Click  and playback window will popup

PLAYBACK by TIME SEARCH & EVENT SEARCH



A. HDD Select

User can select HDD1 or HDD2 for playback

B. Playback Time

User can select the time then press “Time Search” for playback.

C. Time Search

User can select the time then press “Time Search” for playback.

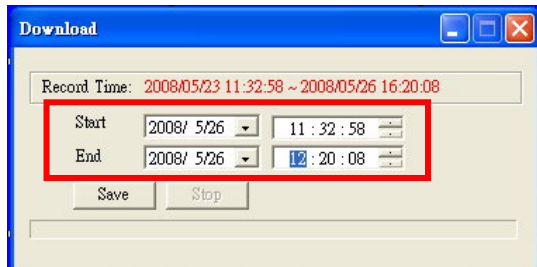
D. Event Search

User can select event item by pressing “Event Search” for playback.

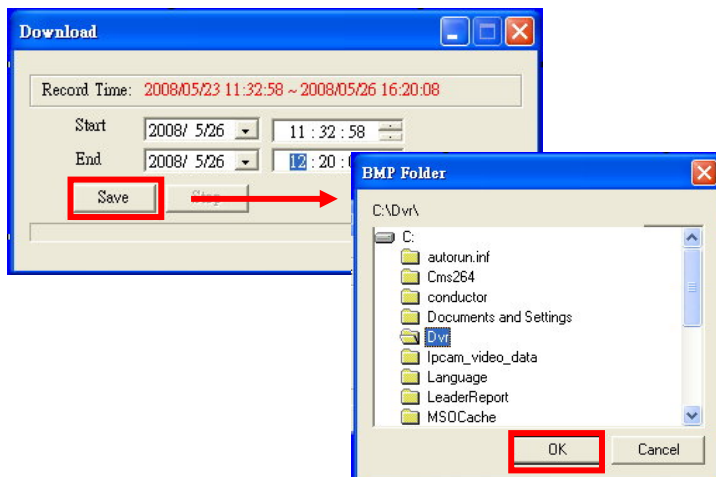
Click  to operate Time-Point backup.

TIME-POINT BACKUP

First, select Start and End backup time which have to among the Record Time.



Then, click **Save** button to select the position on PC where the user is going to backup the data. After that, press **OK** button to start the backup.



Finally, double-click the left button of the mouse to open the saved backup file. The backup file

will named as the time when start to backup, such as, (20080526113258.264) will be 2008/05/26 11:32:58.



OTHER FUNCTIONS



User can use other functions by clicking the left of mouse

A. Snapshot:

User can save any single picture from image.

B. Performance:

User can select image quality (high, medium & low).

C. Use Overlay:

User can use Overlay function.

D. Play audio:

User can play audio function by channel.

Note: remote user can receive audio from DVR & the audio will be saved with image when processing video backup.

6.5 CONFIGURE

A. System - System Information

System Information	
Server Information	
Server Name:	DVR-16CH
MAC Address:	00:0f:0d:00:11:f4
NTP Setting	
Time zone:	GMT+08:00
NTP Server:	198.123.30.132
Interval:	12Hours
Apply	

A-1 SYSTEM INFORMATION

SERVER NAME: This name will show on the IP Installer.

A-2 NTP Setting

NTP SERVER: Revise the time of DVR via different NTP Server.

Note: Time zone and Interval cannot adjust in here (User can adjust both in DATE and TIME SETUP option of DVR Menu).

B. SYSTEM – USER MANAGEMENT

User Management			
Anonymous User Login			
☒ YES ☐ NO		Setting	
Add User			
Username:			
Password:			
Confirm:			
UserGroup:	☐ User ☒ Guest		
Add/Set			
User List			
Username	User Group	Modify	Remove
admin	Administrator	Edit	
aaaaa	User	Edit	Remove

User Management provides 3 levels of limits of authority: Administrator (the highest), User, and Guest.

Administrator: Possessing the highest level of authority to operate full functions within network.

User: Having Live Image and Video Playback authority. Moreover, PTZ controlled is included as well.

Guest: Only have Live Image authority.

Default administrator account: Username: admin Password: admin

B-1 ANONYMOUS USER LOGIN:

YES: Accept anonymous user login without password as guest login.

NO: Anonymous login unacceptable.

B-2 USER MANAGEMENT:

Add: Input Username and Password and then click on **Add/Set** to save.

Modify: Click on selected User name on User List and the following window will popup. After inputting Password and Confirm Password, click on **OK**.

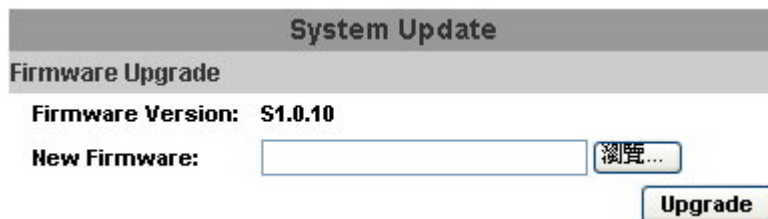
Remove: Click on selected User name on the user list and click on **Remove**.



The screenshot shows a web browser window titled "http://192.168.1.225 - User_Setting - Micro...". The main content area is titled "User Setup" and contains three input fields: "Username:" with the value "admin", "Password:", and "Confirm:". An "OK" button is located to the right of the "Confirm:" field. The browser's status bar at the bottom shows "完成" (Complete) and "網際網路" (Internet).

C. SYSTEM / SYSTEM UPDATE

Click on the "Browse" button to select the latest firmware and then press "Upgrade" button to upgrade the firmware.



The screenshot shows a "System Update" section with a "Firmware Upgrade" sub-section. It displays "Firmware Version: S1.0.10". Below this, there is a "New Firmware:" label followed by an empty text input field and a "瀏覽..." (Browse...) button. An "Upgrade" button is located below the input field.

D. NETWORK – IP SETTING

IP Setting	
IP Assignment	
☐ DHCP	
☒ Static	
IP Address:	192.168.1.164
Subnet Mask:	255.255.255.0
Gateway:	192.168.3.254
DNS 0:	168.95.1.1
DNS 1:	168.95.192.1
Port Assignment	
Web Page Port:	80
Apply	

D-1 IP ASSIGNMENT

DHCP: In Dynamic Host Configuration Protocol (DHCP) mode, DHCP server will get setting done automatically.

STATIC IP: Please input IP address, Subnet Mask, and Gateway based on network environment.

D-2 PORT ASSIGNMENT

With IP Share (Router), the following Ports needed to be adjusted in case of conflict.

E. NETWORK – PPPoE

PPPoE	
PPPoE Setting	
☐ Enabled ☒ Disabled	
Username:	
Password:	
Send mail after dialed	
☐ Enabled	
Subject:	
Apply	

E-1 PPPoE SETTING

Click on Enabled to enable ADSL dial function.

Username: Username for ADSL account.

Password: Password for ADSL account.

After dialed successfully, new IP address will appear.

E-2 SEND MAIL AFTER DIALED

Click on Enabled to enable SEND MAIL AFTER DIALED function.

E-3 SUBJECT

Mail subject.

F. NETWORK / DDNS SETTING

DDNS

DDNS Setting

☐ Enabled ☒ Disabled

Provider:

Hostname:

Username:

Password:

Schedule Update: Minutes

State

Apply

Note:

1. Schedule Update: Feature of DDNS schedule update is designed for IP products which installed behind the ICS or NAT devices. Update range from every 5 (minutes) to 5000 (minutes) and 0 remain to off.
2. Please note that the hostname will be blocked by DynDNS.org if schedule update is more than once every 5 minutes to 60 minutes. In general, schedule update in every 1440 minutes is recommended.

Click on Enabled to enable DDNS function.

F-1 DYNDNS.ORG

DDNS	
DDNS Setting	
☒ Enabled	☐ Disabled
Provider:	dyndns.org
Hostname:	
Username:	
Password:	
Schedule Update:	0 Minutes
State	
Apply	

DDNS SETTING - DYNDNS.ORG

PROVIDER: Select dyndns.org

HOSTNAME: The registered hostname in DYNDNS.ORG.

USERNAME: The registered username in DYNDNS.ORG.

PASSWORD: The registered password in DYNDNS.ORG.

SCHEDULE UPDATE: A period of time to update IP address.

STATE

1. Updating: Information update.
2. Idle: Stop service.
3. DDNS registered successfully, now log by
<http://<username>.ddns.camddns.com>: Registered successfully.
4. Updating Failed, the name is already registered.
5. Updating Failed, please check your internet connection.

F-2 DDNS.CAMNDS.COM

DDNS	
DDNS Setting	
☐ Enabled	☒ Disabled
Provider:	ddns.camddns.com
Username:	
Schedule Update:	5 Minutes
State	
Idle	
Apply	

Schedule Update: Feature of DDNS schedule update is designed for IP products which installed behind the ICS or NAT devices. Update range from every 5 (minutes) to 5000 (minutes) and 0 remain to off.

DDNS SETTING – DDNS.CAMDDNS.COM

PROVIDER: Select ddns.camddns.com

USERNAME: The registered username in DDNS.CAMDDNS.COM.

SCHEDULE UPDATE: A period of time to update IP address.

STATE

1. Updating: Information update.
2. Idle: Stop service.
3. DDNS registered successfully, now log by
<http://<username>.ddns.camddns.com>: Registered successfully.
4. Updating Failed, the name is already registered.
5. Updating Failed, please check your internet connection.

DDNS Setting Steps:

Press ① “ENABLE” option to enable DDNS function and select ②

“**ddns.camddns.com**” of the provider drop down list which is suggested to use. In the following, insert ③ the username which the user wants to apply

(i.e. **DVR_GODDNS** in here). After that, click ④ “Apply” button to apply a DDNS domain name.

The screenshot shows the 'DDNS Setting' window. It has a title bar 'DDNS' and a subtitle 'DDNS Setting'. Below the subtitle, there are two radio buttons: 'Enabled' (selected) and 'Disabled'. To the left of the 'Enabled' radio button is a red number '1.'. Below the radio buttons, there are three fields: 'Provider:' with a dropdown menu showing 'ddns.camddns.com' (annotated with a red number '2.'), 'Username:' with a text box containing 'DVR_GODDNS' (annotated with a red number '3.'), and 'Schedule Update:' with a text box containing '60' and a label 'Minutes'. Below these fields is a 'State' section with a text box showing 'Updating...'. At the bottom right of the window is an 'Apply' button, which is annotated with a red number '4.'.

Finally, the DVR domain name ⑤ (http://DVR_GODDNS.ddns.camddns.com) will be shown on the state block.

DDNS

DDNS Setting

☒ Enabled ☐ Disabled

Provider: ddns.camddns.com

Username: DVR_GODDNS

Schedule Update: 60 Minutes

State

5. http://DVR_GODDNS.ddns.camddns.com

Apply

- NOTE:**
1. If the user selects another provider which is ddns2.ydsdvr.com, all of the setting steps are the same with ddns.camddns.com setting.
 2. However, if dyndns.org provider is selected, please go to www.dyndns.org website to register the account first. The user has to fill in the username, password and hostname for applying the account. After the user applied the account successfully, the dyndns.org will give the user a complete DDNS domain name.
 3. If setting up IP schedule update too frequently, the IP may be blocked. In general, schedule update every day (1440 minutes) is recommended.

G. NETWORK / Mail & FTP

Click on “Motion” or “Alarm” option to enable Mail Setting and FTP Setting function.

Mail & FTP	
Mail Setting: ☐ Motion ☐ Alarm	
Mail Server:	
SMTP Port:	25
Username:	
Password:	
Sender's Mail:	
Receiver's Mail:	
Bcc Mail:	
Event Subject:	
FTP Setting: ☐ Motion ☐ Alarm	
FTP Server:	
Username:	
Password:	
Port:	21
Path:	
Apply	

Mail Server: The IP address of Mail Server (i.e. mail.huntelec.com.tw).

SMTP Port: The port of SMTP (known as Simple Mail Transfer Protocol). (Default value is 25)

Username: The username while log in to the mail server.

Password: The password while log in to the mail server.

Sender's Mail: The sender's account when send the mail via this mail server.

Receiver's Mail: The receiver's mail address.

Bcc Mail: The receiver's mail address for Bcc Mail.

Event Subject: The subject of this mail. (Default value is ALARM MAIL)

FTP Server: The IP address of FTP Server.

Username: The username while log in to the ftp server.

Password: The password while log in to the ftp server.

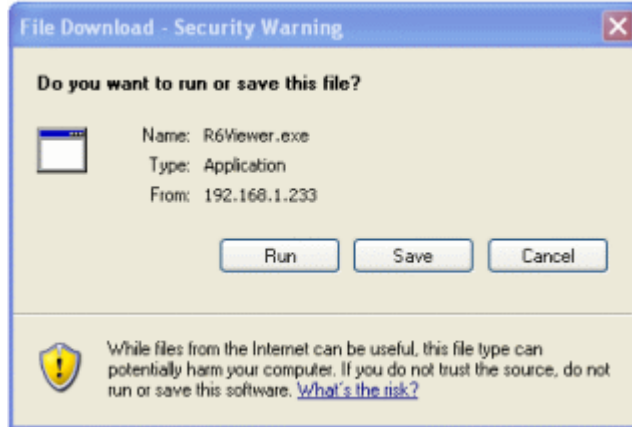
Port: The port number of file transmission. (Default value is 21)

Path: The ftp path where the user wants to reserve the information.

Finally, click on **Apply** button to reserve the setting.

H. OTHERS / Player Downloaded

User can click “Run” button to download the player to local PC.



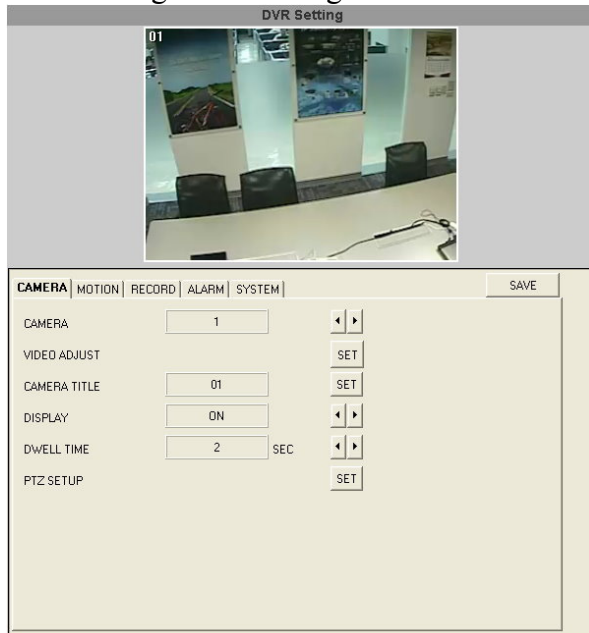
I. OTHERS / Mobile Viewer

Click the drop down list of connection mode to select the sort of mobile viewer connection. Then click **Apply** to reserve the setting. There are JAVA / iPhone and 3GPP (MPEG4) two options. Moreover, the video quality can be setup as well.



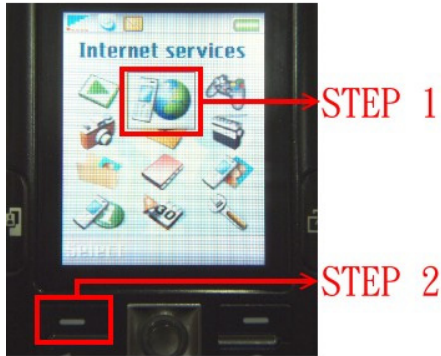
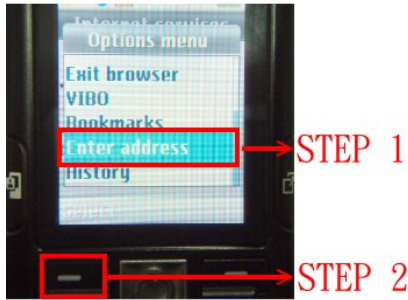
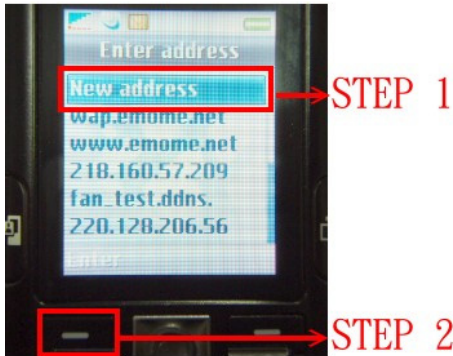
J. OTHERS/ DVR Setting

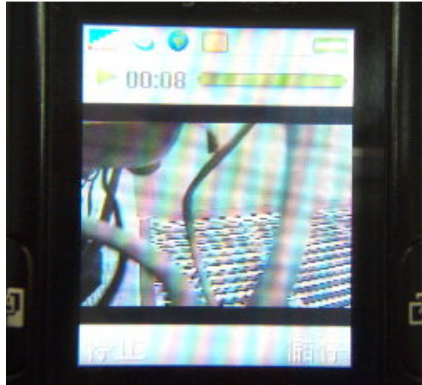
DVR setting can be changed via the Internet.



7. 3GPP APPLICATION & SETTING

3GPP (also known as 3rd Generation Partnership Project) is a corporation which formulate 3rd-generation communication standard specification. Via this wireless communication protocol, the 3G mobile can perform the remote control. The following example is operated by Sony Ericsson 3G mobile phone:

1. Press MENU KEY to get into menu.	2. Select Internet services
	
3. In the Internet services page, press More KEY	4. Select Enter address , and press Select KEY
	
5. Select New address , and press Enter KEY	6. Fill in address rtsp:// <<IP>>/channel (rtsp://220.137.65.246/CH03) and press Go To KEY.
	

7. “ Connected to media server ” will appear	8. Success with vivid image
	

- * 1. 3GPP BANDWIDTH: Minimum 30kbit /sec. per channel.
2. CONNECTION NUMBERS: Maximum 16 people per channel.

APPENDIX A: RECORDING TIME LAPSE (HOURS)

FULL D1 - 720x480 (NTSC)

160 GB Hard Disk													Unit: Hour	
Recording Speed (PPS)	PICTURE QUALITY (KB)													
	LOW			MEDIUM			HIGH			BEST				
	simple	complex	average	simple	complex	average	simple	complex	average	simple	complex	average		
	0.80	5.63	3.52	4.38	10.38	6.78	3.64	13.43	8.98	5.60	17.06	15.66		
	60	970	137	553	190	74	132	213	57	135	138	45	91	
30	1941	275	1108	380	149	264	426	115	270	277	91	184		
15	3883	551	2217	761	299	530	853	231	542	554	182	368		
8	7281	1034	4157	1427	560	993	1600	433	1016	1040	341	690		
4	14563	2068	8315	2855	1121	1988	3200	867	2033	2080	683	1381		
250 GB Hard Disk													Unit: Hour	
Recording Speed (PPS)	PICTURE QUALITY (KB)													
	LOW			MEDIUM			HIGH			BEST				
	simple	complex	average	simple	complex	average	simple	complex	average	simple	complex	average		
	0.80	5.63	3.52	4.38	10.38	6.78	3.64	13.43	8.98	5.60	17.06	15.66		
	60	1517	215	866	297	116	206	333	90	211	216	71	143	
30	3034	430	1732	594	233	413	666	180	423	433	142	287		
15	6068	861	3464	1189	467	828	1333	361	847	866	284	575		
8	11377	1616	6496	2230	876	1553	2500	677	1588	1625	533	1079		
4	22755	3232	12993	4461	1753	3107	5001	1355	3178	3250	1067	2158		
400 GB Hard Disk													Unit: Hour	
Recording Speed (PPS)	PICTURE QUALITY (KB)													
	LOW			MEDIUM			HIGH			BEST				
	simple	complex	average	simple	complex	average	simple	complex	average	simple	complex	average		
	0.80	5.63	3.52	4.38	10.38	6.78	3.64	13.43	8.98	5.60	17.06	15.66		
	60	2427	344	1385	475	186	330	533	144	338	346	113	229	
30	4854	689	2771	951	373	662	1066	289	677	693	227	460		
15	9709	1379	5544	1903	747	1325	2133	578	1355	1387	455	921		
8	18204	2585	10394	3569	1402	2485	4000	1084	2542	2600	853	1726		
4	36408	5171	20789	7138	2804	4971	8001	2168	5084	5201	1707	3454		
500 GB Hard Disk													Unit: Hour	
Recording Speed (PPS)	PICTURE QUALITY (KB)													
	LOW			MEDIUM			HIGH			BEST				
	simple	complex	average	simple	complex	average	simple	complex	average	simple	complex	average		

	0.80	5.63	3.52		4.38	10.38	6.78		3.64	13.43	8.98		5.60	17.06	15.66
60	3034	430	1732		549	233	413		666	180	423		433	142	287
30	6068	861	3464		1189	467	828		1333	361	847		866	284	575
15	12136	1723	6929		2379	934	1656		2667	722	1694		1733	569	1151
8	22755	3232	12993		4461	1753	3107		5001	1355	3178		3250	1067	2158
4	45511	6464	25987		8923	3506	6214		10002	2710	6356		6501	2134	4317

750 GB Hard Disk

Unit: Hour

Recording Speed (PPS)	PICTURE QUALITY (KB)											
	LOW			MEDIUM			HIGH			BEST		
	simple	complex	average	simple	complex	average	simple	complex	average	simple	complex	average
	0.80	5.63	3.52	4.08	10.38	6.78	3.64	13.43	8.98	5.60	17.06	15.66
60	4551	646	2598	892	350	621	1000	271	635	650	213	431
30	9102	1292	5197	1784	701	1242	2000	542	1271	1300	426	863
15	18204	2585	10349	3569	1402	2485	4000	1084	2542	2600	853	1726
8	34133	4848	19490	6692	2629	4660	7501	2032	4766	4876	1601	3238
4	68266	9696	38981	13385	5259	9322	15003	4065	9534	9752	3202	6477

1T Hard Disk

Unit: Hour

Recording Speed (PPS)	PICTURE QUALITY (KB)											
	LOW			MEDIUM			HIGH			BEST		
	simple	complex	average	simple	complex	average	simple	complex	average	simple	complex	average
	0.80	5.63	3.52	4.08	10.38	6.78	3.64	13.43	8.98	5.60	17.06	15.66
60	6068	861	3464	1189	467	828	1333	361	847	866	284	575
30	12136	1723	6929	2379	934	1656	2667	722	1694	1733	569	1151
15	24272	3447	13859	4759	1869	3314	5334	1445	3389	3467	1138	2302
8	45511	6464	25987	8923	3506	6214	10002	2710	6356	6501	2134	4317
4	91022	12929	51975	17847	7012	12429	20004	5421	12712	13003	4269	8636

FULL D1-720 x 576 (PAL)

160 GB Hard Disk												Unit: Hour
Recording Speed (IPS)	PICTURE QUALITY (KB)											
	LOW			MEDIUM			HIGH			BEST		
	simple	complex	average	simple	complex	average	simple	complex	average	simple	complex	average
	1.00	7.04	3.52	5.10	12.98	6.78	4.56	16.79	8.98	7.00	21.35	19.58
50	932	132	532	182	71	126	204	55	129	133	43	88
25	1864	264	1064	365	143	254	408	111	259	266	87	176
16	2912	413	1662	571	224	397	638	173	405	416	136	276
8	5825	827	3326	1142	448	795	1277	346	811	832	272	552
4	11650	1654	6652	2284	897	1590	2555	693	1624	1664	545	1104

250 GB Hard Disk													Unit: Hour
Recording Speed (IPS)	PICTURE QUALITY (KB)												
	LOW			MEDIUM			HIGH			BEST			
	simple	complex	average	simple	complex	average	simple	complex	average	simple	complex	average	
	1.00	7.04	3.52	5.10	12.98	6.78	4.56	16.79	8.98	7.00	21.35	19.58	
50	1456	206	831	285	112	198	319	86	202	208	68	138	
25	2912	413	1662	571	224	397	638	173	405	416	136	276	
16	4551	646	2598	892	350	621	998	271	634	650	213	431	
8	9102	1292	5197	1784	701	1242	1996	542	1269	1300	426	863	
4	18204	2585	10394	3569	1402	2485	3992	1084	2538	2600	852	1726	
400 GB Hard Disk													Unit: Hour
Recording Speed (IPS)	PICTURE QUALITY (KB)												
	LOW			MEDIUM			HIGH			BEST			
	simple	complex	average	simple	complex	average	simple	complex	average	simple	complex	average	
	1.00	7.04	3.52	5.10	12.98	6.78	4.56	16.79	8.98	7.00	21.35	19.58	
50	2330	330	1330	456	179	317	511	138	324	332	109	220	
25	4660	661	2660	913	359	636	1022	277	649	665	218	441	
16	7281	1034	4157	1427	560	993	1596	433	1014	1040	341	690	
8	14563	2068	8315	2855	1121	1988	3193	867	2030	2080	682	1381	
4	29127	4137	16632	5711	2243	3977	6387	1734	4060	4161	1364	2762	
500 GB Hard Disk													Unit: Hour
Recording Speed (IPS)	PICTURE QUALITY (KB)												
	LOW			MEDIUM			HIGH			BEST			
	simple	complex	average	simple	complex	average	simple	complex	average	simple	complex	average	
	1.00	7.04	3.52	5.10	12.98	6.78	4.56	16.79	8.98	7.00	21.35	19.58	
50	2912	413	1662	571	224	397	638	173	405	416	136	276	
25	5825	827	3326	1142	448	795	1277	346	811	832	272	552	
16	9102	1292	5197	1784	701	1242	1996	542	1269	1300	426	863	
8	18204	2585	10394	3569	1402	2485	3992	1084	2538	2600	852	1726	
4	36408	5171	20789	7138	2804	4971	7984	2168	5076	5201	1705	3453	
750 GBHard Disk													Unit: Hour
Recording Speed (IPS)	PICTURE QUALITY (KB)												
	LOW			MEDIUM			HIGH			BEST			
	simple	complex	average	simple	complex	average	simple	complex	average	simple	complex	average	
	1.00	7.04	3.52	5.10	12.98	6.78	4.56	16.79	8.98	7.00	21.35	19.58	
50	4369	620	2494	856	336	596	958	260	609	624	204	414	
25	8738	1241	4989	1713	673	1193	1916	520	1218	1248	409	828	

16	13653	1939	7796	2677	1051	1864	2994	813	1903	1950	639	1294
8	34133	3848	15592	5354	2103	3728	5988	1626	3807	3900	1279	2589
4	68266	7757	31185	10708	4207	7457	11976	3252	7614	7801	2558	5179
1THard Disk												Unit: Hour
Recording Speed (IPS)	PICTURE QUALITY (KB)											
	LOW			MEDIUM			HIGH			BEST		
	simple	complex	average	simple	complex	average	simple	complex	average	simple	complex	average
	1.00	7.04	3.52	5.10	12.98	6.78	4.56	16.79	8.98	7.00	21.35	19.58
50	5825	827	3326	1142	448	795	1277	346	811	832	272	552
25	11650	1654	6652	2284	897	1590	2555	693	1624	1664	545	1104
16	18204	2585	10394	3569	1402	2485	3992	1084	2538	2600	852	1726
8	36408	5171	20789	7138	2804	4971	7984	2168	5076	5201	1705	3453
4	72817	10343	41580	14277	5609	9943	15968	4336	10152	10402	3410	6906

Half D1- 720x240 (NTSC)

80 GB Hard Disk												Unit: Hour
Recording Speed (PPS)	PICTURE QUALITY (KB)											
	LOW			MEDIUM			HIGH			BEST		
	simple	complex	average	simple	complex	average	simple	complex	average	simple	complex	average
	1.00	3.80	2.40	2.00	6.00	4.00	5.00	10.00	7.50	6.00	17.00	11.50
120	194	51	122	97	32	64	38	19	28	32	11	21
60	388	102	245	194	64	129	77	38	57	64	22	43
30	776	204	490	388	129	258	155	77	116	129	45	87
15	1553	408	980	776	258	517	310	155	232	258	91	174
8	2912	766	1839	1456	485	970	582	291	436	485	171	328
4	5825	1533	3679	2912	970	1941	1165	582	873	970	342	656
160 GB Hard Disk												Unit: Hour
Recording Speed (PPS)	PICTURE QUALITY (KB)											
	LOW			MEDIUM			HIGH			BEST		
	simple	complex	average	simple	complex	average	simple	complex	average	simple	complex	average
	1.00	3.80	2.40	2.00	6.00	4.00	5.00	10.00	7.50	6.00	17.00	11.50
120	388	102	245	194	64	129	77	38	57	64	22	43
60	776	204	490	388	129	258	155	77	116	129	45	87
30	1553	408	980	776	258	517	310	155	232	258	91	174
15	3106	817	1961	1553	517	1035	621	310	465	517	182	349
8	5825	1533	3679	2912	970	1941	1165	582	873	970	342	656
4	11650	3066	7358	5825	1941	3883	2330	1165	1747	1941	685	1313
250 GB Hard Disk												Unit: Hour
Recording Speed (PPS)	PICTURE QUALITY (KB)											
	LOW			MEDIUM			HIGH			BEST		
	simple	complex	average	simple	complex	average	simple	complex	average	simple	complex	average
	1.00	3.80	2.40	2.00	6.00	4.00	5.00	10.00	7.50	6.00	17.00	11.50
120	606	159	382	303	101	202	121	60	90	101	35	68
60	1213	319	766	606	202	404	242	121	181	202	71	136
30	2427	638	1532	1213	404	808	485	242	363	404	142	273
15	4854	1277	3065	2427	809	1618	970	485	727	809	285	547
8	9102	2395	5748	4551	1517	3034	1820	910	1365	1517	535	1026
4	18204	4790	11497	9102	3034	6068	3640	1820	2730	3034	1070	2052
400 GB Hard Disk												Unit: Hour
Recording Speed (PPS)	PICTURE QUALITY (KB)											
	LOW			MEDIUM			HIGH			BEST		
	simple	complex	average	simple	complex	average	simple	complex	average	simple	complex	average
	1.00	3.80	2.40	2.00	6.00	4.00	5.00	10.00	7.50	6.00	17.00	11.50

(PPS)	simple	complex	average	simple	complex	average	simple	complex	average	simple	complex	average
	1.00	3.80	2.40									
120	970	255	612	485	161	323	194	97	145	161	57	109
60	1941	511	1226	970	323	646	388	194	291	323	114	218
30	3883	1022	2452	1941	647	1294	776	388	582	647	228	437
15	7767	2044	4905	3883	1294	2588	1553	776	1164	1294	456	875
8	14563	3832	9197	7281	2427	4854	2912	1456	2184	2427	856	1641
4	29127	7665	18396	14563	4854	9708	5825	2912	4368	4854	1713	3283

500 GB Hard Disk

Unit: Hour

Recording Speed (PPS)	PICTURE QUALITY (KB)											
	LOW			MEDIUM			HIGH			BEST		
	simple	complex	average	simple	complex	average	simple	complex	average	simple	complex	average
	1.00	3.80	2.40	2.00	6.00	4.00	5.00	10.00	7.50	6.00	17.00	11.50
	1.00	3.80	2.40	2.00	6.00	4.00	5.00	10.00	7.50	6.00	17.00	11.50
120	1213	319	766	606	202	404	242	121	181	202	71	136
60	2427	638	1532	1213	404	808	485	242	363	404	142	273
30	4854	1277	3065	2427	809	1618	970	485	727	809	285	547
15	9709	2555	6132	4854	1618	3236	1941	970	1455	1618	571	1094
8	18204	4790	11497	9102	3034	6068	3640	1820	2730	3034	1070	2052
4	36408	9581	22994	18204	6068	12136	7281	3640	5460	6068	2141	4104

750 GB Hard Disk

Unit: Hour

Recording Speed (PPS)	PICTURE QUALITY (KB)											
	LOW			MEDIUM			HIGH			BEST		
	simple	complex	average	simple	complex	average	simple	complex	average	simple	complex	average
	1.00	3.80	2.40	2.00	6.00	4.00	5.00	10.00	7.50	6.00	17.00	11.50
	1.00	3.80	2.40	2.00	6.00	4.00	5.00	10.00	7.50	6.00	17.00	11.50
120	1820	479	1149	910	303	606	364	182	273	303	107	205
60	3640	958	2299	1820	606	1213	728	364	546	606	214	410
30	7281	1916	4598	3640	1213	2426	1456	728	1092	1213	428	820
15	14563	3832	9197	7281	2427	4854	2912	1456	2184	2427	856	1641
8	27306	7185	17245	13653	4551	9102	5461	2730	4095	4551	1606	3078
4	54613	14371	34492	27306	9102	18204	10922	5461	8191	9102	3212	6157

1T Hard Disk

Unit: Hour

Recording Speed (PPS)	PICTURE QUALITY (KB)											
	LOW			MEDIUM			HIGH			BEST		
	simple	complex	average	simple	complex	average	simple	complex	average	simple	complex	average
	1.00	3.80	2.40	2.00	6.00	4.00	5.00	10.00	7.50	6.00	17.00	11.50
	1.00	3.80	2.40	2.00	6.00	4.00	5.00	10.00	7.50	6.00	17.00	11.50
120	2427	638	1532	1213	404	808	485	242	363	404	142	273
60	4854	1277	3065	2427	809	1618	970	485	727	809	285	547

30	9709	2555	6132	4854	1618	3236	1941	970	1455	1618	571	1094
15	19418	5110	12264	9709	3236	6472	3883	1941	2912	3236	1142	2189
8	36408	9581	22994	18204	6068	12136	7281	3640	5460	6068	2141	4104
4	72817	19162	45989	36408	12136	24272	14563	7281	10922	12136	4283	8209

Half D1- 720x288 (PAL)

160 GB Hard Disk												Unit: Hour
Recording Speed (PPS)	PICTURE QUALITY (KB)											
	LOW			MEDIUM			HIGH			BEST		
	simple	complex	average	simple	complex	average	simple	complex	average	simple	complex	average
	1.00	3.80	2.40	2.00	6.00	4.00	5.00	10.00	7.50	6.00	17.00	11.50
100	466	122	294	233	77	155	93	46	69	77	27	52
50	932	245	588	466	155	310	186	93	139	155	54	104
25	1864	490	1177	932	310	621	372	186	279	310	109	209
12	2912	766	1839	1456	485	970	582	291	436	485	171	328
8	5825	1533	3679	2912	970	1941	1165	582	873	970	342	656
4	11650	3066	7358	5825	1941	3883	2330	1165	1747	1941	685	1313
250 GB Hard Disk												Unit: Hour
Recording Speed (PPS)	PICTURE QUALITY (KB)											
	LOW			MEDIUM			HIGH			BEST		
	simple	complex	average	simple	complex	average	simple	complex	average	simple	complex	average
	1.00	3.80	2.40	2.00	6.00	4.00	5.00	10.00	7.50	6.00	17.00	11.50
100	606	159	382	303	101	202	121	60	90	101	35	68
50	1213	319	766	606	202	404	242	121	181	202	71	136
25	2427	638	1532	1213	404	808	485	242	363	404	142	273
16	4854	1277	3065	2427	809	1618	970	485	727	809	285	547
8	9102	2395	5748	4551	1517	3034	1820	910	1365	1517	535	1026
4	18204	4790	11497	9102	3034	6068	3640	1820	2730	3034	1070	2052
400 GB Hard Disk												Unit: Hour
Recording Speed (PPS)	PICTURE QUALITY (KB)											
	LOW			MEDIUM			HIGH			BEST		
	simple	complex	average	simple	complex	average	simple	complex	average	simple	complex	average
	1.00	3.80	2.40	2.00	6.00	4.00	5.00	10.00	7.50	6.00	17.00	11.50
100	1165	306	735	582	194	388	233	116	174	194	68	131
50	2330	613	1471	1165	388	776	466	233	349	388	137	262
25	4660	1226	2943	2330	776	1553	932	466	699	776	274	525
16	7281	1916	4598	3640	1213	2426	1456	728	1092	1213	428	820

8	14563	3832	9197		7281	2427	4854		2912	1456	2184		2427	856	1641			
4	29127	7665	18396		14563	4854	9708		5825	2912	4368		4854	1713	3283			
500 GB Hard Disk																Unit: Hour		
Recording Speed (PPS)	PICTURE QUALITY (KB)																	
	LOW				MEDIUM				HIGH				BEST					
	simple	complex	average		simple	complex	average		simple	complex	average		simple	complex	average			
	1.00	3.80	2.40		2.00	6.00	4.00		5.00	10.00	7.50		6.00	17.00	11.50			
100	1456	383	919		728	242	485		291	145	218		242	85	163			
50	2912	766	1839		1456	485	970		582	291	436		485	171	328			
25	5825	1533	3679		2912	970	1941		1165	582	873		970	342	656			
16	9709	2395	5748		4551	1517	3034		1820	910	1365		1517	535	1026			
8	18204	4790	11497		9102	3034	6068		3640	1820	2730		3034	1070	2052			
4	36408	9581	22994		18204	6068	12136		7281	3640	5460		6068	2141	4104			
750 GB Hard Disk																Unit: Hour		
Recording Speed (PPS)	PICTURE QUALITY (KB)																	
	LOW				MEDIUM				HIGH				BEST					
	simple	complex	average		simple	complex	average		simple	complex	average		simple	complex	average			
	1.00	3.80	2.40		2.00	6.00	4.00		5.00	10.00	7.50		6.00	17.00	11.50			
100	2184	574	1379		1092	364	728		436	218	327		364	128	246			
50	4369	1149	2759		2184	728	1456		873	436	654		728	257	492			
25	8738	2299	5518		4369	1456	2912		1747	873	1310		1456	514	985			
16	13653	3592	8622		6826	2275	4550		2730	1365	2047		2275	803	1539			
8	27306	7185	17245		13653	4551	9102		5461	2730	4095		4551	1606	3078			
4	54613	14371	34492		27306	9102	18204		10922	5461	8191		9102	3212	6157			
1T Hard Disk																Unit: Hour		
Recording Speed (PPS)	PICTURE QUALITY (KB)																	
	LOW				MEDIUM				HIGH				BEST					
	simple	complex	average		simple	complex	average		simple	complex	average		simple	complex	average			
	1.00	3.80	2.40		2.00	6.00	4.00		5.00	10.00	7.50		6.00	17.00	11.50			
100	2912	766	1839		1456	485	970		582	291	436		485	166	325			
50	5825	1533	3679		2912	970	1941		1165	582	873		970	332	651			
25	11650	3066	7358		5825	1941	3883		2330	1165	1747		1941	665	1303			
16	18204	4790	11497		9102	3034	6068		3640	1820	2730		3034	1070	2052			
8	36408	9581	22994		18204	6068	12136		7281	3640	5460		6068	2141	4104			
4	72817	19162	45989		36408	12136	24272		14563	7281	10922		12136	4283	8209			

CIF- 360x240 (NTSC)

80 GB Hard Disk													Unit: Hour
Recording Speed (PPS)	PICTURE QUALITY (KB)												
	LOW			MEDIUM			HIGH			BEST			
	simple	complex	average	simple	complex	average	simple	complex	average	simple	complex	average	
	0.50	1.90	1.20	1.00	3.00	2.00	2.50	5.00	3.75	3.00	8.75	5.88	
240	194	51	122	97	32	64	38	19	28	32	11	21	
120	388	102	245	194	64	129	77	38	57	64	22	43	
60	776	204	490	388	129	258	155	77	116	129	44	86	
30	1553	408	980	776	258	517	310	155	232	258	88	173	
15	3106	817	1961	1553	517	1035	621	310	465	517	177	347	
8	5825	1533	3679	2912	970	1941	1165	582	873	970	332	651	
4	11650	3066	7358	5825	1941	3883	2330	1165	1747	1941	665	1303	
160 GB Hard Disk													Unit: Hour
Recording Speed (PPS)	PICTURE QUALITY (KB)												
	LOW			MEDIUM			HIGH			BEST			
	simple	complex	average	simple	complex	average	simple	complex	average	simple	complex	average	
	0.50	1.90	1.20	1.00	3.00	2.00	2.50	5.00	3.75	3.00	8.75	5.88	
240	388	102	245	194	64	129	77	38	57	64	22	43	
120	776	204	490	388	129	258	155	77	116	129	44	86	
60	1553	408	980	776	258	517	310	155	232	258	88	173	
30	3106	817	1961	1553	517	1035	621	310	465	517	177	347	
15	6213	1635	3924	3106	1035	2070	1242	621	931	1035	355	695	
8	11650	3066	7358	5825	1941	3883	2330	1165	1747	1941	665	1303	
4	23301	6132	14716	11650	3883	7766	4660	2330	3495	3883	1331	2607	
250 GB Hard Disk													Unit: Hour
Recording Speed (PPS)	PICTURE QUALITY (KB)												
	LOW			MEDIUM			HIGH			BEST			
	simple	complex	average	simple	complex	average	simple	complex	average	simple	complex	average	
	0.50	1.90	1.20	1.00	3.00	2.00	2.50	5.00	3.75	3.00	8.75	5.88	
240	606	159	382	303	101	202	121	60	90	101	34	67	
120	1213	319	766	606	202	404	242	121	181	202	69	135	
60	2427	638	1532	1213	404	808	485	242	363	404	138	271	
30	4854	1277	3065	2427	809	1618	970	485	727	809	277	543	
15	9709	2555	6132	4854	1618	3236	1941	970	1455	1618	554	1086	
8	18204	4790	11497	9102	3034	6068	3640	1820	2730	3034	1040	2037	
4	36408	9581	22994	18204	6068	12136	7281	3640	5460	6068	2080	4074	
400 GB Hard Disk													Unit: Hour

Recording Speed (PPS)	PICTURE QUALITY (KB)											
	LOW			MEDIUM			HIGH			BEST		
	simple	complex	average	simple	complex	average	simple	complex	average	simple	complex	average
	0.50	1.90	1.20	1.00	3.00	2.00	2.50	5.00	3.75	3.00	8.75	5.88
240	970	255	612	485	161	323	194	97	145	161	55	108
120	1941	511	1226	970	323	646	388	194	291	323	110	216
60	3883	1022	2452	1941	647	1294	776	388	582	647	221	434
30	7767	2044	4905	3883	1294	2588	1553	776	1164	1294	443	868
15	15534	4088	9811	7767	2589	5178	3106	1553	2329	2589	887	1738
8	29127	7665	18396	14563	4854	9708	5825	2912	4368	4854	1664	3259
4	58254	15330	36792	29127	9709	19418	11650	5825	8737	9709	3328	6518
500 GB Hard Disk												Unit: Hour
Recording Speed (PPS)	PICTURE QUALITY (KB)											
	LOW			MEDIUM			HIGH			BEST		
	simple	complex	average	simple	complex	average	simple	complex	average	simple	complex	average
	0.50	1.90	1.20	1.00	3.00	2.00	2.50	5.00	3.75	3.00	8.75	5.88
240	1213	319	766	606	202	404	242	121	181	202	69	135
120	2427	638	1532	1213	404	808	485	242	363	404	138	271
60	4854	1277	3065	2427	809	1618	970	485	727	809	277	543
30	9709	2555	6132	4854	1618	3236	1941	970	1455	1618	554	1086
15	19418	5110	12264	9709	3236	6472	3883	1941	2912	3236	1109	2172
8	36408	9581	22994	18204	6068	12136	7281	3640	5460	6068	2080	4074
4	72817	19162	45989	36408	12136	24272	14563	7281	10922	12136	4161	8148
750 GB Hard Disk												Unit: Hour
Recording Speed (PPS)	PICTURE QUALITY (KB)											
	LOW			MEDIUM			HIGH			BEST		
	simple	complex	average	simple	complex	average	simple	complex	average	simple	complex	average
	0.50	1.90	1.20	1.00	3.00	2.00	2.50	5.00	3.75	3.00	8.75	5.88
240	1820	479	1149	910	303	606	364	182	273	303	104	203
120	3640	958	2299	1820	606	1213	728	364	546	606	208	407
60	7281	1916	4598	3640	1213	2426	1456	728	1092	1213	416	814
30	14563	3832	9197	7281	2427	4854	2912	1456	2184	2427	832	1629
15	29127	7665	18396	14563	4854	9708	5825	2912	4368	4854	1664	3259
8	54613	14371	34492	27306	9102	18204	10922	5461	8191	9102	3120	6111
4	109226	28743	68984	54613	18204	36408	21845	10922	16383	18204	6241	12222
1T Hard Disk												Unit: Hour
Recording	PICTURE QUALITY (KB)											

Speed (PPS)	LOW			MEDIUM			HIGH			BEST		
	simple	complex	average	simple	complex	average	simple	complex	average	simple	complex	average
	0.50	1.90	1.20	1.00	3.00	2.00	2.50	5.00	3.75	3.00	8.75	5.88
240	2427	638	1532	1213	404	808	485	242	363	404	138	271
120	4854	1277	3065	2427	809	1618	970	485	727	809	277	543
60	9709	2555	6132	4854	1618	3236	1941	970	1455	1618	554	1086
30	19418	5110	12264	9709	3236	6472	3883	1941	2912	3236	1109	2172
15	38836	10220	24528	19418	6472	12945	7767	3883	5825	6472	2219	4345
8	72817	19162	45989	36408	12136	24272	14563	7281	10922	12136	4161	8148
4	145635	38325	91980	72817	24272	48544	29127	14563	21845	24272	8322	16297

CIF- 360x288 (PAL)

160 GB Hard Disk												Unit: Hour			
Recording Speed (PPS)	PICTURE QUALITY (KB)														
	LOW				MEDIUM				HIGH				BEST		
	simple	complex	average		simple	complex	average		simple	complex	average		simple	complex	average
	0.50	1.90	1.20		1.00	3.00	2.00		2.50	5.00	3.75		3.00	8.75	5.88
200	466	122	294		233	77	155		93	46	69		77	26	51
100	932	245	588		466	155	310		186	93	139		155	53	104
50	1864	490	1177		932	310	621		372	186	279		310	106	208
25	3728	981	2354		1864	621	1242		745	372	558		621	213	417
16	5825	1533	3679		2912	970	1941		1165	582	873		970	332	651
8	11650	3066	7358		5825	1941	3883		2330	1165	1747		1941	665	1303
4	23301	6132	14716		11650	3883	7766		4660	2330	3495		3883	1331	2607
250 GB Hard Disk														Unit: Hour	
Recording Speed (PPS)	PICTURE QUALITY (KB)														
	LOW				MEDIUM				HIGH				BEST		
	simple	complex	average		simple	complex	average		simple	complex	average		simple	complex	average
	0.50	1.90	1.20		1.00	3.00	2.00		2.50	5.00	3.75		3.00	8.75	5.88
200	728	191	459		364	121	242		145	72	108		121	41	81
100	1456	383	919		728	242	485		291	145	218		242	83	162
50	2912	766	1839		1456	485	970		582	291	436		485	166	325
25	5825	1533	3679		2912	970	1941		1165	582	873		970	332	651
16	9102	2395	5748		4551	1517	3034		1820	910	1365		1517	520	1018
8	18204	4790	11497		9102	3034	6068		3640	1820	2730		3034	1040	2037
4	36408	9581	22994		18204	6068	12136		7281	3640	5460		6068	2080	4074
400 GB Hard Disk														Unit: Hour	

Recording Speed (PPS)	PICTURE QUALITY (KB)												
	LOW			MEDIUM			HIGH			BEST			
	simple	complex	average	simple	complex	average	simple	complex	average	simple	complex	average	
	0.50	1.90	1.20	1.00	3.00	2.00	2.50	5.00	3.75	3.00	8.75	5.88	
200	1165	306	735	582	194	388	233	116	174	194	66	130	
100	2330	613	1471	1165	388	776	466	233	349	388	133	260	
50	4660	1226	2943	2330	776	1553	932	466	699	776	266	521	
25	9320	2452	5886	4660	1553	3106	1864	932	1398	1553	532	1042	
16	14563	3832	9197	7281	2427	4854	2912	1456	2184	2427	832	1629	
8	29127	7665	18396	14563	4854	9708	5825	2912	4368	4854	1664	3259	
4	58254	15330	36792	29127	9709	19418	11650	5825	8737	9709	3328	6518	
500 GB Hard Disk												Unit: Hour	
Recording Speed (PPS)	PICTURE QUALITY (KB)												
	LOW			MEDIUM			HIGH			BEST			
	simple	complex	average	simple	complex	average	simple	complex	average	simple	complex	average	
	0.50	1.90	1.20	1.00	3.00	2.00	2.50	5.00	3.75	3.00	8.75	5.88	
200	1456	383	919	728	242	485	291	145	218	242	83	162	
100	2912	766	1839	1456	485	970	582	291	436	485	166	325	
50	5825	1533	3679	2912	970	1941	1165	582	873	970	332	651	
25	11650	3066	7358	5825	1941	3883	2330	1165	1747	1941	665	1303	
16	18240	4790	11497	9102	3034	6068	3640	1820	2730	3034	1040	2037	
8	36408	9581	22994	18204	6068	12136	7281	3640	5460	6068	2080	4074	
4	72817	19162	45989	36408	12136	24272	14563	7281	10922	12136	4161	8148	
750 GB Hard Disk												Unit: Hour	
Recording Speed (PPS)	PICTURE QUALITY (KB)												
	LOW			MEDIUM			HIGH			BEST			
	simple	complex	average	simple	complex	average	simple	complex	average	simple	complex	average	
	0.50	1.90	1.20	1.00	3.00	2.00	2.50	5.00	3.75	3.00	8.75	5.88	
200	2184	574	1379	1092	364	728	436	218	327	364	124	244	
100	4369	1149	2759	2184	728	1456	873	436	654	728	249	488	
50	8738	2299	5518	4369	1456	2912	1747	873	1310	1456	499	977	
25	17476	4599	11037	8738	2912	5825	3495	1747	2621	2912	998	1955	
16	27306	7185	17245	13653	4551	9102	5461	2730	4095	4551	1560	3055	
8	54613	14371	34492	27306	9102	18204	10922	5461	8191	9102	3120	6111	
4	109226	28743	68984	54613	18204	36408	21845	10922	16383	18204	6241	12222	
1T Hard Disk												Unit: Hour	
Recording	PICTURE QUALITY (KB)												

Speed (PPS)	LOW			MEDIUM			HIGH			BEST		
	simple	complex	average	simple	complex	average	simple	complex	average	simple	complex	average
	0.50	1.90	1.20	1.00	3.00	2.00	2.50	5.00	3.75	3.00	8.75	5.88
200	2912	766	1839	1456	485	970	582	291	436	485	166	325
100	5825	1533	3679	2912	970	1941	1165	582	873	970	332	651
50	11650	3066	7358	5825	1941	3883	2330	1165	1747	1941	665	1303
25	23301	6132	14716	11650	3883	7766	4660	2330	3495	3883	1331	2607
16	36408	9581	22994	18204	6068	12136	7281	3640	5460	6068	2080	4074
8	72817	19162	45989	36408	12136	24272	14563	7281	10922	12136	4161	8148
4	145635	38325	91980	72817	24272	48544	29127	14563	21845	24272	8322	16297

* The value is for reference only

APPENDIX B: HDD COMPATIBLE TABLE

Brand	Model	Capacity	others
SEAGATE	STM3250820AS	250 GB	7200 10
	ST3250310SV	250GB	SV35.3
	ST3400620AS	400 GB	7200 10
	ST3500320SV	500GB	SV35.3
	ST3500320AS	500GB	7200 11
	ST3500418AS	500GB	7200 12
	ST3750640AS	750 GB	7200 10
	ST3750330AS	750 GB	7200 11
	ST31000333AS	1TB	7200 11
	ST31000340AS	1TB	7200 11
	ST31000340NS	1TB	Barracuda ES.2
	ST31000340SV	1TB	SV35.3
	ST31500341AS	1.5TB	7200 11
WD	WD1600AAJS	160 GB	7200 CB
	WD2500AAKS	250 GB	7200 CB
	WD2500AVVS	250 GB	7200 GP
	WD5000AACS	500 GB	7200 GP
	WD5000AVVS	500 GB	7200 GP
	WD5000AAKS	500GB	7200 CB
	WD6400AAKS	640 GB	7200 BLUE
	WD6400AVVS	640 GB	7200 GP
	WD7500AACS	750GB	7200 GP
	WD7500AVVS	750GB	7200 GP
	WD10EACS	1TB	7200 GP
	WD10EADS	1TB	Caviar Green
	WD10EVDS	1TB	Green Power
	WD10EVVS	1TB	7200 GP
	WD15EADS	1.5TB	7200 GP
	WD15EARS	1.5TB	7200 GP
	WD20EADS	2.0TB	7200 GP
HITACHI	HDS721616PLA380	160 GB	7200
	HDT725025VLA380	250 GB	7200
	HDT725032VLA360	320 GB	7200
	HDP725050GLA360	500 GB	7200
	HCP725050GLA380	500GB	7200
	HDT721010SLA360	1TB	7200

* The compatible table is for reference only

APPENDIX C: ERROR MESSAGE LIST

ERROR MESSAGE	ERROR STATUS & REASON	NOTE
DISK ACCESS ERROR!	H.D.D. Data structure Un-normal. Data does not record into DVR or bad sector on DVR H.D.D. Please install another H.D.D. and perform the record again.	
UPDATE FILE ERROR!	Please re-download the update file and update again.	
FIRMWARE UPGRADE FAILED	Please reboot the DVR and upgrade the firmware. Please send the DVR back to repair when DVR is disability.	
MEDIA ACCESS FAIL!	The USB file format is incorrect (Please format the pen drive to FAT32) or Pen Drive is setup to ONLY READ mode (Please annul ONLY READ mode) when reserve the data by using Pen Drive. The data cannot be burn into CD/DVD disc. Please change another CD/DVD disc and backup the file in CD/DVD disc storage.	
NO FILE!	There is no upgrade file within Pen Drive or the name of upgrade file does not correspond with DVR format. Please adjust the upgrade file name based on the following information. 16CH -> UpdateR.bin 08CH -> Update8.bin 04CH -> Update4.bin	
USB DEVICE NOT FOUND NO USB	Pen Drive undetected. Please Unplug the Pen Drive and plug it again.	
BACKUP START TIME ERROR	Backup start time error.	
BACKUPEND TIME ERROR	Backup end time error.	
DISK ERROR	The data cannot be burn into CD/DVD disc. Please change another CD/DVD disc and backup the file.	
FAN FAILED	Fan Error Warning.	
NO LOG DATA	No Events Record.	
SCHEDULE RECORD	The condition is caused by trying to stop recording when perform the schedule record. Please setup the record to manual mode and then stop the record.	
PLEASE SELECT ONE CAMERA	The message will be shown while using the ZOOM function under split screen condition. Please switch the screen into full screen mode and then operate the ZOOM function.	